

# INDUSTRY & INCLUSION

# MANUFACTURING

# WORKFORCE

# STRATEGIES

# BUILDING AN

# INCLUSIVE FUTURE

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

June 2021





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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

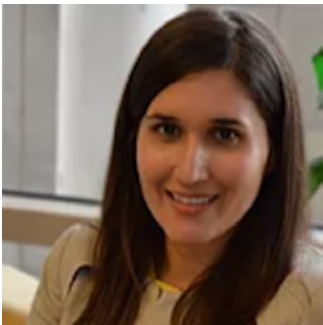
# Industry & Inclusion 4.0 Cohort Members



**Guy Loudon**  
Executive Vice President  
Jane Addams Resource  
Corporation  
Chicago, IL and Baltimore,  
MD



**Catrina Crane**  
Director of Workforce  
Development & Business  
Solutions  
Menomonee Valley  
Partners  
Milwaukee, WI



**Jacqui Mieksztyn**  
Talent & Workforce  
Strategist  
Lightweight Innovations  
For Tomorrow  
Detroit, MI



**Lizabeth Stuck**  
Head of Engagement &  
Workforce Development  
Manufacturing x Digital  
Chicago, IL



**Autumn Russell**  
Vice President, Diversity  
and Inclusion, Early  
College, Early Career  
Manufacturing Advocacy  
and Growth Network  
Cleveland, OH



**Michael Garamoni**  
Manager, Workforce  
Development  
Manufacturing x Digital  
Chicago, IL



**Brittany Becker**  
Program Manager  
Manufacturing Advocacy  
and Growth Network  
Cleveland, OH



**Stephen Tucker**  
President/CEO  
Northland Workforce  
Training Center  
Buffalo, NY



**Erica Staley**  
Executive Director  
Manufacturing  
Renaissance  
Chicago, IL



**Rhandi Berth**  
Chief Innovations Officer  
Wisconsin Regional  
Training Partnership  
| Building Industry  
Group & Skilled Trades  
Employment Program  
Milwaukee, WI

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.<sup>1</sup> 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,



<sup>1</sup> 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



**Abbie Langston**  
Senior Associate,  
PolicyLink



**Emily Stover DeRocco**  
Founder & CEO, E3  
Engage Educate Employ



**Livia Lam**  
Senior Vice President at  
Strategies 360



**Bernadine Hawes**  
Senior Research Analyst,  
Community Marketing  
Concepts, Inc.



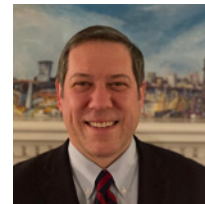
**Héctor Huezco**  
Senior Workforce Equity  
Coordinator, Jobs to  
Move America



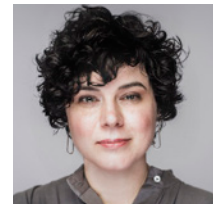
**Montez King**  
Executive Director, NIMS



**Chauncy Lennon**  
Vice President, The  
Future of Learning and  
Work, Lumina Foundation



**Jason R. Drake, Ph.D.**  
Director of Education and  
Workforce Development,  
Dan T. Moore Company



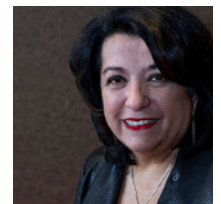
**Sarah Krasley**  
CEO, Shimmy  
Technologies



**Dan Swinney**  
Founder, Manufacturing  
Renaissance



**Keenan D. Grenell, Ph.D.**  
Executive Director,  
Manufacturing Diversity  
Institute



**Teresa Córdova**  
Director of the Great  
Cities Institute (GCI),  
University of Illinois at  
Chicago



**Elmer Moore Jr.**  
Executive Director, Scale  
Up Milwaukee



**Linda Fowler**  
President, Regionerate  
LLC



**William B. Bonvillian**  
Senior Director for  
Special Projects, MIT's  
Office of Digital Learning

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 (NWTTC) 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.

# PROFILE LIBRARY

## 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.

# JANE ADDAMS RESOURCE CORPORATION [JARC]

JARC promotes strong communities, businesses, and households to ensure that people who work do not live in poverty.

Chicago, Illinois & Baltimore, Maryland

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- Anna Hawkins** Trainee, JARC ..... 23
- Lina Cesadero** Trainee, JARC ..... 25
- Teaera Strum** COO, Strum Contracting ..... 26

## Brief Introduction, History, & Background

Jane Addams Resource Corporation (JARC) was founded to keep manufacturing and industrial middle income jobs in the Ravenswood Industrial Corridor of Chicago. Their earliest strategies focused on purchasing and operating commercial space for industrial use. JARC grew and implemented new strategies as more research and increased interactions with manufacturers pointed to the need for upskilling incumbent workers. In the mid-1980s, JARC launched its first training program focused on providing employers incumbent worker training by going to their facilities and training on their equipment. JARC broadened their scope of work in the '90s and established a training center to teach community residents seeking jobs in manufacturing. JARC developed their in-house training programs for positions employers in the Ravenswood Corridor needed filled and for individuals who had no prior experience in manufacturing.

In the early 2000s JARC became an early adopter of the Center for Working Families (CWF) model of supporting new workforce trainees developed by the Annie E. Casey Foundation. The CWF strategy is focused on careers, not jobs, which means it focuses on creating systems that support the whole individual. By integrating the CWF program with the technical skill development program, JARC trainees — both new and incumbent workers — learn manufacturing skills and financial planning and management skills. Also in the early '00s, JARC launched their Manufacturing Bridge Program (MBP) which teaches introductory shop skills, such as how to read blueprints, as a way to improve math and reading skills. The MBP prepares individuals to participate in JARC's manufacturing training program, establishing a new path for more people to apply and succeed.

As manufacturing changed with new digitally controlled tools, JARC's staff, center, and programs kept up, developing programs in computer numerical control (CNC) machine operation, and most recently developing

a 10-week course in 3D-printing. In 2015 JARC launched an affiliate organization in Baltimore, Maryland — Jane Addams Resource Center Baltimore — and in 2017 they added another Chicago-based training center in Austin, a neighborhood on the west side of Chicago. Across all sites, JARC now offers eight manufacturing skills training programs ranging from fundamentals of manufacturing to mechanical assembly to more focused programs in press brake operation and welding. JARC has worked with over 400 employers to develop customized on-site training, to create customized apprenticeships, and/or to complete analysis of their existing workers to better understand strengths and weaknesses among an existing workforce. While JARC has grown and evolved over their 30-plus year history, their guiding belief has stayed the same: "People who work should not live in poverty."

**"We really do a lot more than job training. We provide people with a pretty robust set of services and options and so the more we know about them, the more we can help to make sure that it's going to work."**

-Guy Loudon, Executive Vice President and former President

## About Careers in Manufacturing Programs and Business and Workforce Services

JARC serves both sides of the workforce development community: the employers and the workers. The Careers in Manufacturing Programs (CMP) was created to help any individual, regardless of their skill set, prepare for and gain a job in manufacturing. The Business and Workforce Services (BWS) program offers employer partners customized, on-site training to upskill incumbent workers. Both programs tap into JARC's dedicated staff of adult learner educators, coaches, and technical trainers.

Once a week JARC hosts an application session in each of their Chicago locations for job seekers interested in the CMP. An in-person session lasts for seven hours

and covers a lot of different topics because individuals often don't have any knowledge of manufacturing or about careers in manufacturing. Sessions were designed for job seekers to learn about and evaluate if a job in manufacturing is right for them. The same sessions are opportunities for JARC to learn about the job seeker. JARC's goal in this application process is to learn as much as they can quickly. JARC wants to know about the applicants' experiences both on the job and off; they want to know about potential barriers to participating in training, like the need for childcare or transportation; and they want to know if the applicant is interested and motivated. The application sessions are all about building a candid, honest relationship, and trust, between JARC and a potential trainee. These sessions are an appraisal process because JARC and their support network invest significant financial resources and social capital into trainees, and the trainee will invest a lot of time and energy into the program. If both sides fail to understand what is required and aren't equally invested, those resources are not recoverable for either side.

Participants start by taking a tour of the training center, to see manufacturing processes and technologies in use, and to get a chance to talk with existing trainers and trainees. Afterwards, applicants fill out a rigorous application. The length of the application is another element of getting to know the applicant. Staff at JARC have come to learn that if people tend to skip questions on the application it shows they aren't invested in the opportunity and not that interested in the commitment it takes to be a trainee at JARC. Applicants then take the Test for Adult Basic Education (TABE) to determine their math and verbal skills. Based on their scores, they may move on to an interview or be referred to the Bridge Program or the Adult Learners Programs and Services (ALPS), which provides math and English tutoring and

the education necessary to be successful in one of the Careers in Manufacturing Programs. Once an applicant has made it through the one-on-one interview, JARC may ask for references and job history details. The thorough application process is not about removing candidates, or weeding people out, but instead it is designed to find people that are a good match and serious about fully engaging.



At the Ravenswood facility, trainees can sign up for one of three tracks: CNC Operator, Welding, or Brake Press. All tracks range from 10 weeks and 250 hours to 20 weeks and 500 hours. In the CNC Operator track, for example, over the course of 500 hours, trainees learn at JARC's training center equipped with technology comparable to that used by employers in the region. They learn about running manufacturing equipment using computers, writing code, cutting feed and speed rates, and types of cutting tools. A normal week of training runs Monday through Friday, seven hours a day. Within that 10- to 20-week period, every Friday, trainees participate in the CWF training via group and one-on-one work sessions with a financial coach and an employment coach to develop skills for managing household income, writing resumes, applying for jobs, and learning how





to navigate on- and off-the-job stresses. When training is complete, individuals are prepared to take tests in: National Institute for Metalworking Skills (NIMS) credentialing for CNC Milling Level 1 and NIMS CNC Turning Level 1; and complete the OSHA 10 HR (General Industry) safety course. Since 2006, graduates of the Careers in Manufacturing Program have gone on to work for 411 different companies, 99 of which have hired between 2 and 62 graduates.

JARC's Business and Workforce Services program (BWS) designs and delivers customized worker training for manufacturers and their employees. JARC works with their BWS customers to develop on-site training that incorporates their specific manufacturing process and technologies. The customized training fits within five training topics: workplace safety, basic skills, quality assurance and quality control, manufacturing technology, and lean manufacturing. Before the training, a company can hire JARC to complete a skills assessment for their existing workforce in order to better align training with the existing talent. Training schedules are developed with the employer in mind to create ways that disrupt the production floor as little as possible, while also making

sure training is done in a timely manner. This means, depending on the skills being developed, a worker may be participating in training between two and eight hours a week. Each year the BWS program works with between 20 and 30 companies, most of which are repeat customers but, on average five are new.

## Keys to Success

Over the last decade JARC has developed a strong mix of strategies and innovations. This is the first key to success identified by Guy Loudon, Executive Vice President

and former President of JARC. As an example, the Careers Manufacturing Program blends shop floor learning, simulated to model a work environment; trainers who promote peer learning, teamwork, and leadership development; project-based learning; a curriculum in line with credentials from NIMS or AWS; open entry/open exit<sup>1</sup> enrollment and graduation; and the Bridge Training Program for working families. These elements are brought together in such a way that employers consistently tell JARC their trainees are prepared above and beyond the standards set by other workforce development organizations.

Having outstanding staff plays a big role in JARC's success. JARC understands that dedicated, value-driven people make it possible to recruit and develop a very skilled and motivated team. This has led JARC to have the largest number of full time technical trainers at a non-academic institute in Chicago. The frontline staff are mission-driven and care deeply about the trainees. The instructors are all really good at what they do, or they tend not to stay long. Instructors are either in the classroom teaching, working on new curriculum,

<sup>1</sup> Open entry/open exit allows new trainees to start a training program right away regardless of when existing trainees started the program. This strategy also allows individuals to exit the program when they are hired even if they haven't completed the full training.

or engaging with possible applicants or employers interested in customized training. They are always on the go and looking for new ways to improve the program and support system.

Outstanding partnerships are necessary for JARC to focus on what they do best. JARC has had a lot of opportunities to grow and the best outcomes have all been centered around outstanding partners. The strongest example of this is JARC's expansion into Baltimore. JARC was brought in by the Association of Baltimore Area Grantmakers as well as government and private sector partners. Because Baltimore doesn't have members of the Financial Opportunity Centers or organizations that implement the Center for Working Families model as they do in Chicago, JARC had to develop partnerships to develop the support systems necessary to meet the needs of their trainees. All the organizations were motivated and excited to work together which allowed JARC to replicate their model quickly and efficiently. The same is true in Chicago. For example, an employer partner recently stepped up and provided space to host JARC's new Austin location after they were forced to relocate. JARC also works with Manufacturing Renaissance on developing policies to promote holistic workforce development strategies across the city.

Loudon also acknowledges the role new recommendations set forth in the federal Workforce Innovation and Opportunity Act (WIOA), signed into law in 2014, played in their recent success. The act created a sharp break from workforce strategies that were in place from the '70s to the early '00s. WIOA promoted sector strategies for identifying skills development and understood the need for support services — two fundamental elements JARC had in place from the beginning. It is agreed that workforce development hasn't completely changed and adopted the recommendations, but it is waking up the workforce

development community to leave behind racist and uninformed practices. WIOA has helped JARC and other similar organizations by setting new standards for what a good workforce development organization is and how it should operate. These standards are impacting how and where financial resources can be allocated.

**“Because it’s a simulated work environment that is very project-based, we do a lot of peer-based learning. It’s not for lack of resources, it is part of the design. We want our trainees to learn how to be team players, how to give and receive leadership, and how to give and receive criticism. When you’re struggling in the world of work, you don’t go get your foreman, you ask a coworker that you have a working relationship with. When you’re an incoming trainee, you may be working under the wing of a senior trainee, observing him or her while she goes about her projects. And then after lunch, she may be taking you into the lab and helping you set up your first program.”**

-Guy Loudon, Executive Vice President and former President

## Outcomes

The majority of individuals JARC serves through the Careers in Manufacturing Program meet the federal and state WIOA eligibility requirements for Individual Training Accounts (ITAs). To be eligible for an ITA, one has to be a low-income individual, a dislocated worker, an individual with limited skills and barriers to employment, or a youth. The majority of ITA-eligible individuals in Chicago are people of color and women. By working with this audience JARC is helping make the advanced manufacturing sector more diverse. At their core, they are helping people learn, promoting those who are learning, and helping manufacturing companies keep their talent working.

Beyond helping over 400 people complete training and find jobs over the past 10 years, JARC has developed other initiatives that have made an impact. JARC's Women in Manufacturing Program (WMP) addresses gender in manufacturing jobs that traditionally are male-

dominated. Women participate in the CMP tracks and family service support systems while also gaining access to the Emergency Fund to mitigate short-term financial emergencies that often derail commitment to training. The WMP also offers more customizable and flexible scheduling options. Because of this program, 20 percent of JARCs trainees are now women. In 2019, the Center for Urban Research and Learning at Loyola University Chicago completed a study on the WMP and developed new recommendations and materials for JARC to increase their ability to recruit and retain female trainees.<sup>2</sup>

JARC is also creating more employer-based outcomes with a new initiative called HR Roundtables: discussions on equity and inclusion in partnership with Women Employed and the Race Matters Institute at Just Partners. The first roundtable was offered in March 2021 and focused on sexual harassment in the workplace; the second will focus beyond diversity, to racial equity and inclusion, in the summer. JARC plans to ask Industry Advisory Council members to recruit their HR staff and decision makers to attend and participate in the dialogue. JARC is also reaching out to their network via their newsletter. The roundtables are a first step in helping local manufacturers develop new equitable practices. The belief is that businesses will attend because they know they can, and want, do better. Rather than bombard them with more reasons why they should change, JARC is working with partners to focus on offering companies a way to learn how to adopt new strategies. JARC has secured grant funding to cover costs for local manufacturers to bring in Women Employed — a nonprofit advocacy organization whose mission is to improve women’s economic status and remove barriers to economic equity — to help them write new sexual harassment policies and learn best practices.

**“The role of the Industry Advisory Council is a way of organizing the end customer employer and giving them a voice in what we do. And that is a real voice, it’s not symbolic. The employers are really engaged through that medium. Our press brake program was developed because the Advisory Council asked for it. Same for the new 3D printing track. They gave us feedback that trainees could be better skilled in their frontline quality assurance functions. So we really ramped up the training to make sure that it was much more systematic. We really count on the Council to help us get better.”**

-Guy Loudon, Executive Vice President and former President

## The Future [Scaling]

One of the challenges facing JARC is that they get more opportunities than they can responsibly accept while meeting their high standards. This means JARC has to be very strategic about their growth, making sure that what they are adding is mission-driven and responsible, not just growing for growth’s sake. This reinforces the role that partnerships play in JARC’s success. A 2018 report by American Enterprise Institute<sup>3</sup> helped JARC understand why Baltimore succeeded and why Metro West — a JARC training center located in the Chicago suburbs — failed. The research helped reinforce the role of and need for engaged stakeholders outside of JARC.

JARC sees themselves expanding in Chicago as they continue to operate their original site and headquarters in Ravenswood and their newer location in Austin. These locations run their Careers in Manufacturing Programs, offering tracks in CNC operation, welding, and assembly. JARC is working on a new site in Chatham on the South Side. They will start by offering tracks in assembly and 3D Printing. These new expansions demonstrate JARC is getting better at evaluating opportunities to replicate and expand.

Beyond Chicago, JARC is working to expand their center in the Park Heights neighborhood of Baltimore. This

<sup>2</sup> Recruiting Women into Manufacturing Job Training at Jane Addams Resource Corporation [https://www.jane-addams.org/files/9715/6349/1187/Recruiting\\_for\\_nontraditional\\_trades.pdf](https://www.jane-addams.org/files/9715/6349/1187/Recruiting_for_nontraditional_trades.pdf)

<sup>3</sup> What Works: Replicating Success at the Jane Addams Resource Corporation <https://www.aei.org/spotlight-panels/what-works-replicating-success-at-the-jane-addams-resource-corporation/>

means recruiting more trained staff, getting the word out to more potential applicants, and continuing to find new employers and support service partners. JARC is also in initial conversations to open a location in Rhode Island.

Now that JARC has had some experience replicating its model, each new location is getting easier. They have developed a specific approach and system that allows them to gauge whether the commitment to a new location is a good fit or whether they should change course and review other opportunities. By 2022, JARC plans to have three locations in Chicago, one in Baltimore, and one in Rhode Island, while still being open to other opportunities.

The evaluation of those opportunities is consistent with JARC's updated strategic plan which incorporated a race, equity, and inclusion lens. This means JARC is working on being physically present where there are long-standing issues of racism and inequality — something they believe to be more important now than ever. That's where JARC wants to find themselves in the future: making a difference in distressed and marginalized neighborhoods that are being left behind.



# Adonis Summerville

Senior Manufacturing Instructor

Jane Addams Resource Center

One evening on the West Side of Chicago, Adonis Summerville was on a city bus when a friend from high school came aboard and asked him one life changing question: *what are you doing with your life?* What was an expected question between old friends took Summerville by surprise.

“It was one of the hardest questions,” recalled Summerville. “I was never really approached like that before. I felt kind of attacked.” When Summerville responded with the same question, his friend told him that he was learning CNC at Jane Addams Resource Corporation (JARC). Ten years later, not only is Summerville a certified CNC professional, but he teaches it at the same program where he learned it.

When Summerville went through JARC’s training, the program did not have as many machines as they do now, so most days it was first come, first serve. This made him eager to get into the shop before anyone else, including the instructor. With a deeper purpose behind his punctuality beyond just getting to class on time, he still had to learn the programming, which he found extremely challenging.

“One day after class, I’m taking the train home, flipping through my book, trying to understand CNC programming and it just clicked,” Summerville said. “That was my lightbulb moment, and I knew that I had to take advantage of that.” With his newfound confidence and a six-month old daughter at home, Summerville became motivated to learn everything he could about CNC. He felt that he was on a different path than his fellow classmates. He finished the program in three weeks and got a job upon completion.

“I felt like this was definitely my calling. I turned it into a ball of fire, I ran with it, and did not take it for granted. I think it was probably the best thing that ever happened to me,” he said, remembering his thinking at the time, before joking about not following in his father’s footsteps. “I don’t want to be an electrician. My father was an electrician. That’s too dangerous for me.”

As an instructor at JARC, he takes a hands-off approach, preferring that trainees learn CNC in a factory-like atmosphere rather than in a traditional pedagogical manner. At first, this was costly for JARC because students kept crashing the machines. Listening to him break it down, his teaching style would intimidate even the most eager trainee, but Summerville has proven that it works. When he was a JARC trainee, the program was only long enough to be certified for CNC mill, not CNC lathe. When he became the instructor, he wanted students leaving the program with a certification in both mill and lathe. Some of his students have done just that in six to eight weeks.

Summerville’s goal is for his students to understand how CNC works from start to finish, so that they do not fear crashing the machine. He wants them to understand that on a job they may only have 30 days to prove their worth to a company, so they need to be fully accountable for their machine and their parts. He wants them to get



accustomed to being taught by their peers and teaching others what they know, because in a work environment they will be placed in similar situations, sometimes with people who are completely different from them.

When Regan Brewer, now Executive Director of JARC, approached Summerville to be one of their metalworking skills instructors, he turned her down many times. He had been working for John Crane, a local firm, making six figures a year, and teaching was far from his mind. Then in 2017, she caught him at the right moment, offering him much less money than he was making at John Crane, but more of a meaningful experience. Though he loved his job and felt needed at John Crane, he made the decision to join JARC. Then, John Crane offered him a part-time position – something they never do – so that he could continue to work there while teaching. Once Summerville was offered teaching positions at both of JARC's locations in Chicago and Baltimore, he had to leave John Crane completely.

After three years instructing at JARC, Summerville is grateful to be one making a way for others to succeed. “A few years before I met my friend on that city bus, I was in prison, ” said Summerville. “I always tell people that’s why I came back to teach at JARC. People here are trying to change their life, which is what this class did for me. I could have just been another statistic, but I felt like I made the changes that I needed to make to get where I am now. I’ve come a long way, and I owe a big part of that to my friend I saw on the bus and to JARC.”

# Anna Hawkins

## Trainee

Jane Addams Resource Center

Years before her training at JARC, Anna Hawkins worked for a cosmetics company doing visual merchandising in a soap store. She spent her shifts surrounded by savory fragrances while cutting and stacking soap. How did she go from separating soap to joining steel in JARC's welding program?

"I like working with my hands," explained Hawkins, who loves practicing self-taught crafts like painting and drawing for fun. "I'm not good at them yet. But I still try all the time." Her grandfather had a furniture repair business in his garage when she was younger, so her love of working with her hands is shared by at least one other person in her family.

Prior to joining JARC, Hawkins went to college to study nutrition and dropped out, but returned to study public health. Both times in college, she juggled two part-time jobs while studying. "I lived on my own and had no outside help with my expenses. It was getting tough, I was struggling to even pay rent sometimes. I had to ask myself if I was going to college because I was told that was the only way, or if I was going because I could truly see myself using the degree that I was pursuing." Although Hawkins knows she could probably go back to college for the few courses required to get a degree in public health, she sees a future for herself in manufacturing.

She was prepared for the hands-on education at JARC, but was surprised at the breadth of the curriculum. She was expecting the program to be more intensive than extensive, but accepts that much of her learning will take place in the workplace.

"I started to get frustrated, because I wasn't working on the machines as much as I wanted to," admitted Hawkins. "I was doing the same thing over and over again." When she understood that the objective of JARC was to prepare her for the workforce, and not teach her everything that she needs to learn, she became less discouraged. Now she is proud of her choice.

"There's never a day where I'm just sitting or doing book work," described Hawkins. She says she is blessed to have teachers that capture the attention of the students. Hawkins loves the passion that she sees from the educators and how they build confidence. "When you first get into welding, if you've never done anything like that before, it could be kind of scary, because you don't want to hurt anybody or yourself."

Hawkins tries to be a great example for other younger people like herself, but is dismayed that too many are looking for ways to get rich quickly or to find fame on social media. When she told one of her friends that she was joining a welding program, her friend was puzzled. That is why she has her own suggestions for what programs like JARC can do to attract younger people.

"I would love to see JARC and programs alike specifically going to career days, after school programs, community colleges, or malls and shopping centers in



underserved or lower income communities,” Hawkins said. “Specifically, where young people would not usually be exposed or privy to opportunities like the programs at JARC, giving them other options to consider for their futures.”

With so many options for her to pursue in welding, she is not sure what she wants to do. All she does know is that she wants to work on different projects everyday, and not be stuck doing the same thing all the time. Like some of her teachers, Hawkins is interested in returning to JARC at some point as the one in front of the class educating the next generation of welders.

“I would definitely be open to giving back and even helping JARC with ideas and helping to materialize whatever the program looks like in the future.”



# Lina Cedasero

## Trainee

Jane Addams Resource Center

After getting promoted twice within a logistics company, Lina Cedasero had no idea where her career would go next. Eventually, she slowly began to realize that the future she was looking for was not in some far away place or an-out-of reach industry. It was right next door.

Cedasero worked as an inbound coordinator at a warehouse in Chicago where the company shared a large facility with a candy manufacturer. Over time she would get to know some of the employees at that manufacturer and they would tell her about their jobs. She was impressed by the variety of professions that they did and the volume of work that they handled.

“They were always busy,” recalled Cedasero. “No matter what, it could be a down day for us, but they were always busy. And they were getting paid well.” One of her friends from high school had just graduated from JARC after working for years at O’Hare International Airport. Though Cedasero did not know what JARC was, it was her friend who recommended the program.

When Cedasero looked around at the other business in the area and the products that they produced, she became interested in manufacturing. She began to ponder that if a company manufacturing candy had so many interesting jobs, then companies making even more robust products will have just as many and more opportunities. “That’s why I decided to go through the program at JARC,” said Cedasero. “So I can know what they do, and learn from them.”

Receiving CNC training at JARC was a new experience for her. Everything from the terminology to learning to code was new. “They give you a book to read, do the work and move on to hands-on training. That’s how you

learn,” she said. Though she doubted herself at the beginning, she became confident enough to show other people how to use the machine. Now as a certified CNC operator, she encourages other trainees to get their certifications. When they are reluctant, Cedasero tries to convince them.

“You already know how to do it. Just get certified,” is what she tells them. “That makes you more legit.”

As for her younger relatives, Cedasero is already trying to influence them. “My niece saw me doing math and working with blueprints in the beginning, and commented how she does that in her school too. I told her to keep with it, because in the future that knowledge can open a lot of options.” With her 18-year-old nephew, who is harder to influence, she tries to get him to join JARC by encouraging him to watch YouTube videos of people making things with their hands and with machines. “You know, in the future, you could probably even have your own machine and make whatever it is you wanted to make,” she tells him. “You could start a business. You never know.”

Cedasero has shown that just making friends within the neighborhood, even at work, can open up a world of possibilities just next door that you didn’t even know were there.



# Teaera Strum

COO

Strum Contracting

In seven years as COO, Teaera Strum has turned Strum Contracting into one of the most sought-after entities in Maryland construction. Over this period of time, the company has grown from five to 25 employees, and from a 1,200-square-foot office to a sprawling 20,000 square-foot facility. Strum Contracting has benefitted from the presence of Jane Addams Resource Corporations (JARC) in the Baltimore community, which has trained new and existing employees, further adding to productivity.

“I found out that JARC was opening their second site in Baltimore through a guy named Jim Earlbeck who runs Earlbeck Gases & Technologies,” recalled Strum. “He’s very well known in the welding industry here in Maryland.” After going to a meeting with Earlbeck, Strum fell in love with what JARC was trying to achieve. It was that moment she committed herself to helping the program make Baltimore its permanent home. As she became more aware of JARC’s focus on underserved and chronically unemployed communities, Strum became more involved. When JARC Baltimore graduated its first cohort of students, Strum Contracting was the first employer to hire from the program. JARC was not only a match made in heaven for Strum Contracting, it was a dream come true for Strum herself, who was looking for a way to create an in-house program for her company to train and employ those in underserved areas.

“I was looking to see how we could develop some type of program where we could help people learn how to weld and change the trajectory of their life,” explained Strum. “Since the city of Baltimore has a high unemployment rate, teaching skills that can feed their

family and eat for the rest of their lives was my goal.” Her thinking was that in Maryland, learning welding is a skill and certification that someone could pick up in a matter of weeks. In a short timeframe, a potential welder can go from making minimum wage or less, to making \$20 to \$22 an hour. In the heavy civil construction sector that Strum works in, welders can make \$27 to \$32 an hour on some projects. Strum knew from her previous position that a program that utilizes a person’s skill set and provides people with a way to better themselves could be successful.

“I come from the sports industry, specifically the National Collegiate Athletic Association. Towards the end of my career there, I was doing program development and evaluation within a department called student athlete development,” described Strum. “Essentially, it’s working with student athletes to discuss next steps in their careers, as making it to the professional level isn’t always feasible for most.” Her role with the NCAA was to help students use their education for their next act in life by giving them the tools to take their short-term opportunity which came through sports, and propel them forward to their post-sports career. When Strum transitioned into heavy civil construction, the idea of creating something similar, but for the less fortunate in her community, seemed like a no-brainer.



“Welding has low barriers to get in, doesn’t cost a lot, and you’re not repaying Sallie Mae,” Strum explained. “It’s a skill set that you can always use and it’s in demand.” With JARC, she saw a program that was already doing what she envisioned setting up, which allowed Strum Contracting to be at the forefront of change in these underserved communities. Strum knew her company was going to grow in the future, and needed a program like JARC to provide the talent pool necessary to sustain that growth.

Strum is currently serving as a JARC Board Member, and has since become the President of their Industry Advisory Council, along with a representative from Earlbeck Gases & Technologies.

Although Strum’s father started the company 33 years ago, it never crossed her mind that she would end up leading a heavy civil construction firm. “If you had told me eight years ago that I would be working for Strum Contracting, I would have said, there’s no way, you’re lying,” she laughed. “But I fell in love with the workforce development opportunities and the chance to provide livable wages that can change peoples’ lives.” She said learning the business and construction side of the company was easy. Strum always had an awareness of what her father did for a living, but was not aware of the legacy her father had growing up.

“I remember he used to get up at three, four in the morning, go to work and come home late. I knew that he worked on bridges and pipelines, but back then I really didn’t understand how impactful that work was,” explained Strum. “I didn’t know he’s actually a legend in this industry until I started working in it.”

Now, Strum and her sister Kerra, a Senior Project Manager at Strum Contracting, are continuing their father’s legacy, while playing a pivotal role in Baltimore’s economic development.

# LIGHTWEIGHT INNOVATIONS FOR TOMORROW [LIFT]

Driving American Technology and Talent Into the Future.

Detroit, Michigan

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## Brief Introduction, History, & Background

Since its founding in 2014, Lightweight Innovations For Tomorrow (LIFT), the Detroit-based, Department of Defense-supported national Manufacturing USA Innovation Institute, has invested in more than 40 replicable and scalable education and workforce development initiatives. All programs were focused on developing an advanced manufacturing talent pipeline and have been deployed, tested, and refined throughout the Midwest region. The focus on workforce was one of the original tasks defined on day one of LIFT opening its doors. LIFT was one of the first three National Manufacturing Innovation Institutes formed. In the seven years LIFT has been operating, they have been able to organize and work with over 150 partners and industry stakeholders to inform the development of its education and workforce development strategies.

In 2019, LIFT launched the Learning Lab, an immersive learning facility with seven unique labs, such as: Smart Factory Digital Twin Lab, Fundamental Skills Development Lab, and ASM Materials Science & Project Fabrication Lab. Labs are equipped with a wide variety of computer controlled technology from progressive sheet metal forming to drill presses, from plasma treating to extrusion presses, and from welding to flexible joining. Within those labs, LIFT delivers IGNITE, a curriculum which uses real industry challenges to prepare students for the most in-demand manufacturing careers. The Lab and the curriculum create engaging, technology-infused learning experiences inspiring students and encouraging participation in learning. Students are exposed to materials, technologies, processes, and systems, equipping them for success in careers as multiskilled technicians, technologists, and engineers. LIFT also delivers its Operation Next program,

designed to train individuals for the most in-demand technician careers, in the Learning Lab.

In the first year of operation, LIFT launched multiple partnerships with local schools and community-based organizations to provide immersive manufacturing learning experiences for students in the Learning Lab. One partnership with University Prep Academy, the largest charter school in the City of Detroit, resulted in 80 students completing performance-based training on the IGNITE curriculum in the LIFT Learning Lab daily. All of the students that enrolled in the UPrep IGNITE program were Black youth from low-income communities. Additionally, LIFT is training 30 individuals in the Operation Next training program, with those individuals earning industry-recognized credentials in CNC Operations or Welding.



Both the IGNITE and Operation Next programs are being implemented beyond the Learning Lab by educational providers nationwide.

## About IGNITE and LIFT Learning Lab

LIFT developed IGNITE: Mastering Manufacturing, a three year program, to introduce students to technologies, concepts, and processes that are necessary for a successful career in manufacturing today and into the future.

The IGNITE program provides STEM-based education and career path exposure to students from the city's communities that have historically been left out of advanced manufacturing opportunities. In Detroit's high schools, 79 percent of the population is Black, and 11 percent is Latinx.<sup>1</sup> In the foundational year of IGNITE, students are introduced to materials, materials science, and engineering design processes. This includes deep dives into many types of everyday and cutting materials. In parallel, students learn the importance of observing and documenting their work and learning process. The second half of the year introduces key skills in safety and measuring, technical skills like CAD/CAM programming, robotics, understanding electricity and fluid mechanics, and higher level concepts in manufacturing like plant organization. In year two, students take advanced classes in topics from year one and are introduced to lean manufacturing practices. In their third year students work in groups to complete a capstone project — a project that builds on their existing skills from years one and two, while giving them new abilities to problem solve and work with industry specific and emerging technologies.

Operation Next is an accelerated hybrid training model combining virtual learning with hands-on performance-based training. The program was originally designed to train active duty military in their last six months of service to earn industry-recognized credentials in CNC

machining, industrial technology maintenance, welding, or robotics. Operation Next is being expanded to also serve National Guard and Reserve members, military spouses, and more recently civilians impacted by the COVID-19 pandemic. The curriculum, delivered to all target audiences, is aligned to industry-recognized credentials defined by National Institute of Metalworking Skills (NIMS) and American Welding Society (AWS).

LIFT is able to deliver these training programs in-house via the Learning Lab, a 6,500-square-foot, state-of-the-art, interactive learning facility, located in the LIFT Manufacturing Innovation Institute. With these learning facilities co-located in LIFT's Smarter Manufacturing Innovation Lab, LIFT's students are exposed to new technologies and cutting-edge processes while learning the fundamentals they need to thrive in an advanced manufacturing workplace. The technology is being



developed by LIFT members, a blend of for-profit companies, academic institutes, and government agencies. This means LIFT is always working with both industry-ready and next-generation technologies. To provide the training and instruction, LIFT depends on a network of contracted instructors rather than staffing

<sup>1</sup> <https://sdc.datadrivendetroit.org/profiles/97000US2612000-detroit-city-school-district-mi/>

teachers themselves. LIFT only has one staff member dedicated to the Learning Lab, a manager with 15 years of experience in education, who helps run the day-to-day operations. She provides some co-teaching and co-curriculum development when needed. The manager builds relationships with instructors and hires them on a contract basis. For example, one of the instructors for their welding program teaches welding at a high school and one instructor in a CNC training program is an adjunct professor at a community college. In the IGNITE program, technical instructors collaborate with teachers from the high school to deliver all aspects of the education and student support. The combination of the IGNITE curriculum and the Learning Lab provides a unique learning environment where students gain insights into manufacturing skills and careers as well as exposure to the design and engineering of technology.



LIFT worked with over 150 stakeholders across five states to pilot 40 programs. The ongoing relationship with local industry partners, members of LIFT, and technology developers helps to make sure the curriculum and skill development is in line with what is needed for immediate job placement and lasting success.

**“If you are pursuing a career in the advanced manufacturing space you have to be engaged in ongoing education. The pace of technology is changing so quickly, it is not realistic to think it will be the same thing forever. This requires people to embrace wanting to learn and keep up with technology and requires workforce development programs to be open to ongoing improvements.”**

-Jacqui Mieksztyn, Talent & Workforce Strategist

## Keys to Success

For LIFT to succeed in developing workforce training they knew from the beginning that it had to look differently. Their goal was to work with partners in the region to do something innovative, rather than parachuting in with the new solution. In their first years,

Similarly, LIFT took an open approach to creating the Learning Lab. From the start, LIFT wanted the Learning Lab to be seen as a community asset, to have it be an educational space, not just an activity space or a space just for industry and technology. Getting students in the door took some effort. LIFT originally approached several school

systems in the region about using the LIFT Learning Lab as a performance-based training center for their students. After nearly 18 months of planning, LIFT ultimately partnered with University Prep Academies, Detroit’s largest charter school system. However, several barriers to partnership were identified, including finding transportation to students. The Skillman Foundation — a nonprofit helping Detroit children gain access to educational and economic opportunities — provided

support to cover the cost of transportation and within a couple months students from University Prep Academies were attending classes at the Learning Lab. This led to the first cohort of high school students starting the three-year curriculum in 2019.

LIFT is aware that technical training is only one aspect of making sure that people are successful, and that individual students need help not just getting a job but being successful in their careers long-term. To help achieve this, LIFT has developed a relationship with local Michigan Works! Agencies, Michigans' Workforce Investment Board (WIB). Through this partnership students can get help identifying other supportive and wraparound services. This allows LIFT to focus on the training, and the WIB can help connect the dots and identify, financial aid, transportation assistance, child care assistance, and financial literacy planning for students in any target group. While many employers and trainers might first approach the WIB for funding to cover training costs, partnership typically goes beyond that. The WIB becomes another layer of support and coaching which increases students' abilities to commit and succeed.

**“It is a challenge to find an instructor that knows how to weld, or be a CNC operator, has teaching abilities, and then add to that, the ability to work with students of all ages who have experienced trauma. It is difficult to find the unicorn instructors and so we are looking at resources to help our instructors, at LIFT, and those involved in the workforce development in the region.”**

-Jacqui Mieksztyn, Talent & Workforce Strategist

## Outcomes

Since launching the Learning Lab in Summer 2020, LIFT has also trained 10 students in welding and CNC Operations, earning relevant industry-recognized credentials. While LIFT has been impacted by restrictions from the COVID-19 pandemic, pausing in-person learning for much of 2020, LIFT is planning to continue to offer virtual components of both IGNITE and Operation

Next. Forty-five students remain enrolled in IGNITE through the partnership with UPrep. Technologies like Siemens Digital Twinning have allowed LIFT to provide students cutting-edge virtual learning experiences using technology that is being adopted globally as an industry standard — now much more rapidly because of the pandemic.

LIFT's impact beyond the number of students trained can be seen in the stakeholder network they have built and continue to learn from and with. In their short history, they have worked with over 150 education and workforce development stakeholders in Michigan, Indiana, Ohio, Tennessee, and Kentucky to launch educational workforce and technology development support. This network has allowed LIFT to explore the deeper question: how do you create workforce development programs around technology that is constantly changing and reframing the skills necessary for a career in manufacturing?

## The Future [Scaling]

LIFT from the outset had a focus on scaling their programming. This led them to build their IGNITE

curriculum and Learning Lab using a modular approach, making it possible for other cities, states, or regions to adopt and implement some or all modules. The curriculum, as seen at LIFT's Detroit HQ, can be modified for different age groups and student backgrounds, from high school to community college to workforce development models, whereas the

different labs that make up the larger Learning Lab can be established individually or together. The modularity also allows different partnerships and stakeholders to take shape. The Operation Next program is scaling to new military bases around the country, including expanding to communities with significant National Guard presence, creating new partnerships at each location between the military, technical instructors, and industry. There is also a project supported by National



Institute of Standards Technology (NIST) to use the same structure as Operation Next but to bring it to small and medium manufacturers to help them retrain their incumbent workforce, specifically individuals who have been displaced because of COVID. One pilot program in Pittsburgh, PA is bringing together ARM (Advanced Robotics for Manufacturing, another Manufacturing Innovation Institute), university partners, and regional industry.

Another scaling strategy is to increase the number of students learning at the Lab and to have the space fully utilized. Currently the interest is there, and increasing use will require building new relationships with charter schools like University Prep and finding ways to navigate previous barriers to working with the public school system. While virtual classes and learning was not part of their original vision, what they have learned out of necessity has opened up the possibility of ongoing online learning even after COVID-19 restrictions have been removed.

**“Getting industry engaged with new workforce programs, especially those designed to prepare a talent pipeline into the future, can be a tough sell. Manufacturers, especially small and medium-sized manufacturers, are so (rightfully) focused on their immediate workforce needs they often aren’t looking further out to their longer term needs. It’s a challenge to demonstrate the value and ROI to companies to get them involved and invested in developing their workforce.”**

-Jacqui Mieksztyn, Talent & Workforce Strategist

Lastly, getting industry more engaged will help scale outcomes and program opportunities. The early partnerships that LIFT built were from the education and workforce development sector, local workforce boards, community colleges, universities, and some community development organizations. These partners were vital in helping provide clarity on what to teach, how to teach it, and who to focus on. As with most new approaches to workforce development, some manufacturers are engaged and onboard from the beginning, but the majority are hesitant to get behind an initiative without a track record. LIFT is fortunate to

have found some early adopters, through the Aluminum Extruders Council due to their use of Siemens twinning technology. The belief is, as more students (in all three tracks) complete the programming, LIFT can generate a track record of placements and success, which will draw in more manufacturers and industry partners, increasing demand for skilled graduates, and therefore increasing the resources available to get more people engaged and learning.

## Brandon Lane

Science Curriculum Director

UPrep Academy

As the UPrep Academy Science Curriculum Director, Brandon Lane is an educator who believes that his role is not only to help youth succeed academically, but to play the role of an ethnographer and marketer for manufacturing.

“Our students are looking for something that doesn’t waste their time,” said Lane. “Something that will be meaningful to their lives and their circumstances today.” Demonstrating how manufacturing can positively impact their situations, both professionally and personally, is Lane’s effective approach to getting youth interested in the industry.

But selling manufacturing as a career path for youth has its challenges. Over the years, Lane has had students that are involved in narcotics, and their willingness to change course all depends on their relationship with their family. Some students are raised in that life, while others are sheltered from it.

“For students raised in the game, their father might have a position in the neighborhood, and that ends up being their entire life. Even if they wanted to leave, they can’t,” explained Lane. “But then you have instances where you may have a kid whose family has decided, *although we’re doing this, you can never be a part of it.*” With delicate situations at home like that for youth, getting them focused on the right life trajectory requires more than a slick in-class presentation and a glossy trade publication.

“This is where you have to be an ethnographer,” Lane said. “You have to be willing to go into the community and speak with the parents, and have a very honest

conversation about outcomes, *what do you want for your kid’s life?* And then it’s important to have that conversation with the child as well.”



Speaking with the community is a step that Lane feels is often forgotten in the education system. What the community sometimes wants their kids to learn from school is more nuanced than most educators think. “With schools, our idea of what a child needs is education. We think that they need to have some level of literacy in particular content areas. Great. But sometimes you’ll ask parents, what do you think your kid needs, and they really want you to value their child’s personhood and to be willing to push them, rather than coddle them because of fear or deficit thinking because of the zip code they come from,” explained Lane.

According to him, this conversation with the community may start with finding out what the kids need to learn, but that is only the beginning. The whole education system, including programs like LIFT and their partners, need to be involved in an ongoing dialogue with the community.

“Company or school leaders need to go to churches and rec centers, and they need to go to corner stores. And they need to ask some of these people, even just regular residents, *what does the community need? What do you*

*feel is important to you, on this block?"* described Lane. *"Oh, you need a playground? We have this partner, and we're going to meet you halfway. Are you willing to come to this? Let's build the playground together. Go into the community, identify their needs, but don't do it for them. Do it together."*

Once a connection is formed between the education system and the community, Lane strongly believes in exposing the kids to life outside of that community. Lane grew up in Philadelphia, where he ran track in high school, and competed all over the East Coast. Seeing different places was eye opening for him, and gave him ideas for what he wanted to do with his life. Lane believes the same can work with youth today when guiding them towards manufacturing.

"We have a travel abroad program. We took our kids to Europe, and they saw something. That's the tipping point," Lane explained. "That's that critical point where you could probably pour in something, and they're changed forever."

# Deon Hamilton

Global Account Manager

Siemens

When Deon Hamilton was hired by Siemens in 2007, he was the only Black sales engineer on the industrial side of their sales department. Although he was grateful to be a part of a great organization, there were times when the pressure felt immense. Fast forward 14 years later and he is a Tier 1 Automotive Global Account Manager for Siemens. How did he make it to where he is today?

“It was very overwhelming at times. I felt like the world was on my shoulders,” admitted Hamilton. “But thankfully, some of the core spiritual aspects of myself really played a part in helping me get through that. The aspect of faith, knowing that God has me here for a reason, knowing that I wasn’t here by accident, but that I was intentionally placed here to do great things. It gave me more confidence to push past some of those negative feelings.”

While Hamilton was finding hope in the divine, experienced employees at the company also mentored him. “I will say, I have had some awesome people within Siemens offer advice to me along the way. But at the end of the day, it came down to my personal faith.” Realizing that we all have a responsibility to give back, Deon has sought ways to serve the community and help build bridges between corporate America and the inner city — particularly with LIFT.

He explains that there were several reasons Siemens wanted to partner with LIFT. “LIFT’s location right in Detroit, is pretty crucial for me and the automotive industry that I help serve,” explained Hamilton. “I was born and raised in Detroit, and the fact that there’s a state-of-the-art facility in Detroit, whose mission is to

prepare the workforce, of today and of tomorrow with access to new technologies relevant to manufacturing just resonated with me. That resonates with Siemens overall, in terms of what we’re trying to do, and the challenges that we see in our industry.”

Seeing the possibilities in his hometown for both students at LIFT and the company that he works for gives him a sense of pride. Most notably, the partnership is an example of two entities involved in manufacturing in different ways, and with the same view of what the industry needs.

“Overall, being a part of LIFT and their mission, the fact that their mission aligns with our mission, to really help this next generation as we move into this next era of digitalization within manufacturing is critical,” continued Hamilton. “There are a lot of common points between both organizations.”

According to Hamilton, what makes LIFT unique among the other manufacturing training organizations around the country that Siemens partners with is their well-rounded focus on both education and workplace development. Another defining feature is the fact that LIFT has students and professionals working under the same roof, using the latest in Siemens technologies.



“LIFT has manufacturing equipment on their floor, to help roll out some of these new technologies within digital manufacturing,” said Hamilton.

Hamilton sees the changing technologies in the industry as an opportunity to attract younger workers to replace the many baby boomer employees that are retiring. He is concerned that there will not be enough new employees to fill the gap, which is why he and Siemens are so dedicated to ensuring LIFT attracts youth at an early age.

“There are a lot of organizations that are emphasizing coding to elementary and middle school kids. Learning to write code is becoming more and more important, because these are the jobs of the future,” he emphasized. “We really need to educate and capture the hearts of the younger generation, so that they desire these types of careers.”

Exposing kids to new technology will make Hamilton’s job much easier in the long run, because he likes to hire people who have a variety of experiences. The engineers of today must have multiple skill sets, with the knowledge of how and when to apply them.

“The ability to be agile is becoming more critical, because things are changing so fast. And if you have a wide range of experiences, a wide range of handling different problems, as opposed to specializing in one area, it makes you more marketable as a person in our industry,” Hamilton explained. “It makes adapting to these new technologies a lot easier, because you’re not so focused on one particular area. You develop the capacity to engage on multiple different levels, multiple different areas.”

With Siemens, Hamilton mentors younger employees by inviting them to meetings so that they can see how he conducts business. He sees LIFT as an opportunity to do that for the younger generation, especially with students coming from the same inner-city neighborhoods that he grew up in. When he was the only Black sales engineer in sight, he believed that he was divinely placed there for a reason. The more he is involved with LIFT, the more he sees why. “That’s something that I’m passionate about,

and I look forward to working closely with LIFT and Siemens as we carve out mentorship opportunities to impact the lives of inner-city youth.”

# Marianne Donoghue

Learning Lab Director

LIFT

When students look back at their time at a school or in a training program, the educators who they remember most are often the ones willing to go the extra mile to help them succeed. As the Director of the Learning Lab at LIFT, Marianne Donoghue manages the operations of seven spaces dedicated to training students from K-12 all the way up to adult workers. Though the work of a director is not the same as that of an instructor.

“Being a former teacher, I think my biggest concern was that I wouldn’t be interacting with students,” said Donoghue. She worked as a high school teacher for 15 years, and is used to engaging directly with students. “That’s what I like the most. Being able to make a difference.”

When she was a high school teacher, she taught mathematics in Pontiac, Michigan to students from diverse backgrounds. Managing their expectations for what they should get out of education and teaching students who were culturally different from her gave her insight that she brings to her role at LIFT. “When I design programs, I know these are probably the resources they’re going to have at home,” Donoghue said. “I feel like my understanding is a little bit deeper.”

She designs programs that focus on hands-on and interactive work, so that students can both work in the lab and observe what the professionals are doing in LIFT’s Research and Engineering Institute. That’s where students see what the real work looks like. “We talk about what technicians are doing, and I show them these are the skill sets that they will have,” said Donoghue. “I found that worked really well.”

Earlier on in the pandemic, Donoghue designed a program in partnership with the United Way to send STEM kits to students so they could do that hands-on work at home.

Prior to the pandemic, the time in the lab allowed Donoghue to walk around and observe how the students do their experiments. Typically, each student comes to the lab with a teacher from their school, and this helps Donoghue build stronger relationships with them. “I would start to see their personalities. Do they get frustrated fast? Do they seem to like it?” Whether in person or online, she finds that the best way to encourage students is to say something positive about what they are doing. “Even if you’re going to critique them, you always want to say you’re really good at this, but you need to change that,” Donoghue explained.

On top of giving students technical skills, she goes one step further. “We do a résumé building workshop,” she described. “I started doing it in the second to last week of the program, but once I started doing it closer to the beginning I noticed the students actually got really motivated.”

Doing the workshop at the beginning gives the students more time to get a second certification than at the end



of the program when there are only two weeks left. Students bring their résumés to Donoghue to review and she instructs them on how to emphasize their talents. “I show them where the credentials they are earning should go on their résumés, because sometimes I think people get these credentials, and nobody tells them how to use them,” Donoghue lamented. “They need to know how to word their résumés to market themselves. I talk about very specific career wording and how it should be framed. So when a company sees it, they’re going to know, oh, this person is what we want.”

LIFT also does career talks, where Donoghue gives students a holistic view by inviting industry partners to attend. They are very receptive to her tips on how to talk to students in an engaging manner. They talk about the credentials they will earn, and what they can do with those credentials. If students do want to pursue higher education, but don’t have the resources, Donoghue helps them find the funding and coaches them on how to write a letter of intent.

“Whether it be to go get a job on the production floor or become a welding engineer, I like to give them options,” she said.

# Monica Rosas

Trainee

LIFT

A typical day for high school student Monica Rosas consists of class in the morning and work in the afternoon. She works two part-time jobs, and some days she has cross country after school.

“I try to keep a very tight schedule,” said Rosas. “One of my part time jobs schedules me almost all the time. At my other job, I just pick up shifts whenever I can.” The Saturday of our conversation, Rosas had a cross country meet in the morning, and worked in the afternoon.

As active as she is, her parents ensure that she knows which portion of her time is the most important. “In my house, school always comes first. And will always come first,” explained Rosas. “So if work is too much, I will back off so I can focus on my education.”

Prior to joining LIFT in July 2020, she became aware of the advantages to working in manufacturing through her dad, who assembled car seats for Lear. Though her father is now retired after working 12 years in the industry, Rosas finds inspiration in him. She knew that companies employed people and robotics to create products and equipment for a variety of industries. The moment she joined LIFT, she was excited to learn skills that she could use to build things.

“The training was very similar to what I experienced in school, because I was in a welding program over there, too,” described Rosas. “It was the same teacher. I like learning from this teacher, because he was very informative. He would show us everything in the book, but when the lessons were over, we would go to the machine. We’d learn everything and see everything hands-on. It made learning a lot more fun.” Rosas

believed that the practical work with the machines helped her to remember the theoretical work from class.

It also helped that she had been in a welding program at her high school since her junior year, which made it easier for her to pick up on the training at LIFT. “I would say it took me about two weeks to adjust,” she recalled. After she became comfortable with the program, the defining moment came when an industry partner came to speak to the class about career development. The presentation gave her ideas for what she could do after high school.

“I really love welding, and I knew I wanted to do that as a career, but I didn’t know which route to take. Just hearing people come in, like the rep from Miller Electric, talking about what he did inspired me to want to be a welding engineer,” said Rosas, who plans to get an associates degree at Washtenaw Community College. “It just excited me to know that there was that option to go into.” Rosas loves the idea of welding one day and being in the office the next.

Where does Rosas see her career leading to? The automotive industry. “I’ve always liked cars, because they seem really cool to me. When I was picking my classes out my junior year, I didn’t know if I wanted to take welding or the auto body shop,” she explained. “Learning more about welding, how welding is a big part





of automotive, and seeing other kids from the auto body shop helped me to see I can do what they do too.”

If you think the clarity of vision that Rosas has for her career development is impressive, wait until you know how far she’s willing to go to achieve her goals. One of her teachers helped her see things clearly. “I hope to get into a large company. With my Hispanic background and being bilingual, I will be able to travel out and help other companies,” said Rosas. “There’s a lot of automotive companies in Mexico, so sending me out there to help communicate with these workers and show them what to do is what I hope to do.”

When asked if entrepreneurship is something that she may want to pursue, Rosas is not sure, but is not prepared to rule it out. “A lot of my family run their own businesses. My grandma, she has her own store, and my aunt has her own tech company. So this is something I will feel competent in doing because of the support of my family, and knowing what business is like.”

# MANUFACTURING ADVOCACY AND GROWTH NETWORK [MAGNET]

Revitalizing STEM education, growing our manufacturing companies,  
and strengthening our communities.

Cleveland, Ohio

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## Brief Introduction, History, & Background

In 2017, The Manufacturing Advocacy and Growth Network (MAGNET) launched a new workforce development program: Early College, Early Career (ECEC). ECEC adapts European-style manufacturing apprenticeships to Ohio schools, providing 9th and 10th graders exposure to careers and opportunities in manufacturing and 11th and 12th graders opportunities to take college classes, to earn manufacturing certifications, to work in paid internships, and to get professional development and soft skills training. ECEC fits under one of MAGNET's three main tracks of programming: Growth Services, Workforce Development, and Start Up Services. MAGNET is a nonprofit consulting group who, for over 30 years, has helped Northeast Ohio manufacturers grow their businesses through hands-on consulting, engineering assistance, and worker training programs. MAGNET collaborates with manufacturing CEOs, governments, community leaders, and educators to solve problems and build opportunities. MAGNET is part of the National Institute of Standards and Technology (NIST) and Ohio Manufacturing Extension Partnership (MEP) program, which supports small- and medium-sized manufacturers across the U.S..

The development of ECEC started in 2015. Eight companies, many of which have an executive presence on MAGNET's board, put together research on ways to grow manufacturing in the region, create a workforce, help manufacturers recruit and retain employees, and establish a long-term solution to close the skills gap. The other component of the research was how to focus on youth, especially those still in high school. The research pointed toward the opportunity that lies in youth apprenticeships and early exposure to manufacturing. This decision was highly influenced by the board chair from Germany who had extensive experience with the industry apprenticeship programs. The board took the

**“Early College Early Career (ECEC) really speaks to our belief that no one should have to choose between college or a career. We wanted to create a program that provided various pathways for high school students to access a viable career in manufacturing. ECEC was designed to prepare those that choose college, and those that choose to enter the workforce after graduation. Our program, very intentionally, has different components available to students that support the advancement of either decision.”**

*-Autumn Russell, Vice President, Diversity and Inclusion, Early College, Early Career*

research's recommendations and made them a priority. After two years of planning, MAGNET launched ECEC with eight host companies.

### About Early College, Early Career

ECEC is an employer-led initiative with ten companies — including Swagelok, Lincoln Electric, Nordson Corporation, and Parker Hannifin — as the initial core. ECEC combines many different elements to create a comprehensive career pathway. These elements are built around the goals of heightening the awareness of manufacturing careers not only to high school students, but also parents and educators.

Students, starting in the 9th grade, are introduced to careers and opportunities in manufacturing. MAGNET works with members of the initiative to offer plant tours, provide guest speakers representing diverse and under-represented populations, and create engaging online videos to introduce students to rewarding careers in manufacturing. In many cases, the same activities used to introduce students to manufacturing careers are attended by teachers and parents. To increase awareness about manufacturing in general and share different career pathways, MAGNET goes to participating high schools and presents the ECEC program to 10th grade students. They explain the ECEC application process, and drill down into what the program offers



The employers also treat the internship as a stepping stone into future employment. Companies see the two-year commitment as an investment and a test run with a potential employee.

MAGNET's staff — led by Autumn Russell, Vice President, Diversity and Inclusion, Early College, Early Career, and Brittany Becker, Program Manager of Early College, Early Career — are responsible for building relationships across the manufacturing ecosystem. They search for employers that offer internships and plant tours, and can be guest speakers and mentors; they engage with high schools to

and the commitment level that is required. Through a combination of self-selection, teacher recommendations, parent engagement, and employer interviews, students join the ECEC cohort. If a school administrator or teacher thinks the student is a good fit for the program, they provide a recommendation.

Students in the ECEC program are starting their career pathway while still in high school. During their 11th and 12th grades, students have the opportunity to earn up to 15 college credits taking courses that map to an associate degree in Advanced Manufacturing Technology through community college partnerships. Twelfth grade students in the ECEC cohort spend up to 12 hours per week working in paid internships. Students work full-time in the summer between junior and senior year.

They also have the opportunity to earn industry credentials through training and course work. Any college classes are paid for through Ohio's College Credit Plus (CCP) program. Even further, ECEC employers offer tuition reimbursement to employees to promote ongoing education, and students are eligible for this benefit once hired. By covering the cost of college, employers remove the debt burden that often stops students from committing to higher education.

participate in the ECEC program; and they collaborate with community colleges and training centers who offer courses needed to work towards credentials and certificates.

The relationship building work requires many different types of engagement. For example, when working with high schools, some connections start with school district-level administrators who approach MAGNET. In other cases an individual school principal or career pathway coordinator learns about MAGNET and invites them to share information. Depending on who in the school is championing the idea, there may be a need to educate administrators, principals, and teachers about the value of the program and the motivation behind ECEC.

To navigate relationships with employers and students, MAGNET created the Internship Coach and Mentorship roles. The Internship Coach works with both the student intern, making sure they are prepared with soft and technical skills, and the employer, acting as a liaison between the intern, the company, and MAGNET. They have regular weekly conversations directly with the intern's supervisors about any immediate concerns, and Russell leads monthly conversations at a higher level

to find out how the partnership is progressing. This communication is vital to help manage expectations of everyone involved and to increase the likelihood of long-term success for everyone.

If issues arise in the workplace that may come from culture clashes between the employer and students, then MAGNET can coach the student and make recommendations to the company to address the issue. If issues arise outside of the workplace that are impacting a student's ability to commit to the work, the Mentor gets more involved. Mentors are full-time MAGNET staff responsible for tracking student engagement and academic performance, developing relationships, identifying barriers that students may have, and linking students to resources to address any barriers. The Internship Coaches and Mentors make sure students have what they need in order to be successful through the program.

MAGNET has also filled in other roles and responsibilities as the program has had early success and uncovered issues. For example, MAGNET provides transportation, taking students to work or community college, and their Education Coordinator organizes additional training. MAGNET has also developed links to the support networks in and around the high schools where their ECEC cohorts are learning. This allows them to connect

**“As we are educating and informing students, we’re also doing the same for parents and for school partners. What we really want to do is get them to understand manufacturing and how it has evolved, how it’s different, debunking some of those myths that manufacturing is dark, dirty, and dangerous and instead showing the advancement of the industry and career opportunities.”**

-Autumn Russell, Vice President, Diversity and Inclusion, Early College, Early Career



students, and employers, to resources which help students stay on the career pathway.

## Keys to Success

Collaboration is the first key to success from Russell's point of view. In the ECEC program, partners — employers and schools — are included in decision-making. This creates buy-in and establishes accountability and a sense of ownership of results. In 2020, MAGNET started having more consistent strategic discussions with ECEC employer partners to improve their process. Before any big decisions are made about how ECEC works, partners are brought to the table to give feedback to ensure an inclusive process. Individual teachers and parents are part of the collaboration too. They play a big role in the recruitment process because they are likely to see an awareness and interest in a student that would typically be hard to uncover just through an interview or application.

Ongoing improvement and data-driven decision making also inform MAGNET's success. While all key components have been in the ECEC program from the start, they have gone through iterations. For example, at the beginning MAGNET had mentorship in a contracted role, and the mentor would engage with over 40 students. MAGNET quickly learned that relationship development was very important with students. Now mentorship is an in-house position and more accessible and available to students more often. Another example of an improvement is the hiring and interviewing process. A representative from MAGNET and an employer interview prospective students together. This has led to more inclusive hiring practices and helped make better pairings between talented students and employers.



**“We want to make sure that the flow of communication is there, between a supervisor working with one of our students, the student, and MAGNET. Consistent communication allows us to address any issues, whether performance-based or culturally-based. There can be translation issues that stem from people coming from different cultures and generations.”**

-Brittany Becker, Program Manager of Early College, Early Career

## Outcomes

In 2020 MAGNET received a grant from the National Science Foundation to create a robust system to measure outcomes. MAGNET works with two external partners to access and track student data, as well as Ohio's central repository for all employment, salary, and educational data. Reporting has shown that 84 percent of students who successfully completed the program

are currently in manufacturing careers, college, or a combination. ECEC participation also shows significantly higher scholastic achievement and graduation rates compared to non-ECEC students. Research shows that high school students taking courses in-line with college curriculum and career readiness are more likely to apply to college and find early job placement.<sup>1</sup> ECEC has not been in operation long enough to show long-term outcomes, but early data is in line with these findings. There are also positive outcomes for those students who explore other paths. Should a student not want to attend college and they pursue work somewhere other than where they interned, they still have their industry certification.

From the start, ECEC built a commitment to racial, gender, and socioeconomic equity into their program. ECEC is bringing educational and work opportunities to predominantly inner-city, low-income youth, with 78 percent of ECEC students coming from low-income, predominantly African American communities. MAGNET has also improved its outreach to female students, increasing the percentage participating from 18 percent in the first cohort to 22 percent in 2019. In 2019, nearly

<sup>1</sup> 2020 Building A Grad Nation Report, authored by Civic and the Everyone Graduates Center at the Johns Hopkins University School of Education, and released annually in partnership with the Alliance for Excellent Education and America's Promise Alliance. <https://www.americaspromise.org/report/2020-building-grad-nation-report>

600 9th and 10th grade students learned about manufacturing careers in an intensive, culturally appropriate, and meaningful way. Seventy 11th and 12th graders were placed in paid internship positions while also taking high school and college courses and getting professional development coaching. Students earned an average of \$10,000-\$15,000 in internship positions while training for their future.



## The Future [Scaling]

MAGNET has seen growth each year: more students, parents, and teachers attending manufacturing awareness events; more students participating in ECEC cohorts; more schools joining as partners; and more employers hosting interns. The pandemic impacted the recruitment process and slowed down some of the growth, which has created a space and opportunity for MAGNET to evaluate its scaling process. The question to define a scaling strategy is: *how can MAGNET build a better and sustainable ECEC model post-pandemic?* A sustainable ECEC starts with increasing student recruitment and MAGNET is evaluating how to increase the number of students involved. They're asking questions like, *is it more effective to add another school with only a handful of students the first year, or get new students from one of the 10 schools they are already working with?* And while historically high schools have been their primary recruitment partner, MAGNET is considering building relationships with new community-based organizations to find interested students.

Russell also recognizes that future growth is dependent on the economics of running the program. After the early learning and changes, ECEC is in a position to better understand the cost per student, and the cost of the program overall. With their data collection and reporting process happening in parallel, MAGNET can understand how investments in different staff, events, partners, and

programs impact outcomes. This gives them a chance to optimize costs and increase or decrease investments in different aspects of ECEC.

The second component to financial sustainability is diversified funding. In 2020, ECEC was 100 percent grant funded, 85 percent coming from philanthropic grants. MAGNET and partners are exploring how to attract investment and revenue. This means looking into possible funding through the public school system because MAGNET and partners are contributing to student education, providing fee for service work for employers since they are providing HR related services, and working with the state to utilize funding tied to traditional workforce development models.

The last element needed to scale is ongoing education of people and organizations — teachers, administrators, parents, employers, other workforce development organizations — about manufacturing and diversity, equity, and inclusion. MAGNET is involved in helping make a larger cultural shift: changing the minds of parents, teachers, and students about manufacturing; changing the perception that college is the only path to higher education; and changing how employers hire, train, and respond to what they perceive as a non-traditional workforce.

## Bill Swan

Training & Development Specialist

Swagelok

If you ask Bill Swan how he got into manufacturing, he would say that he stumbled into it. In the late 1980s, he had a successful plumbing business and got numerous new home construction contracts. Then almost overnight, it all fell apart.

“The Gulf War hit, and new home construction went very low,” recalled Swan. “I had four kids at home, and I needed a job. So in between what little plumbing contracts I did have, I supplemented that with some part-time work.”

It was a difficult decision for Swan, who until that point only wanted to grow his plumbing business into the best service provider of the kind in his community. He loved helping customers pick out plumbing fixtures, and working on new home construction projects that last a lifetime. Nevertheless, at that moment, he found himself turning away from his personal vision for his family’s sake.

“I went to a temp employment agency, and they sent me to Swagelok. I filled out a resume and was hired,” said Swan. Two weeks into his new part-time job, he came to a surprising realization that he loved it. “I’m not going anywhere,” Swan said to himself at the time. “I gave up on my plumbing business.”

Why did a man with an entrepreneurial vision of his own, put that vision aside for a manufacturing job where he had no experience?

“I loved Swagelok’s culture, values, respect for teamwork, innovation, and desire to serve their customers, without fail,” explained Swan. “So when

I started adding up all these elements, I felt like if I was to build my ideal business, it would be this.”

Three decades later, Swan is Swagelok’s Training & Development Specialist.

Things fell in place for him at the right time, with the right company. When he looks back on how he got to where he is now, it all seems like it was meant to be. “I think what happened to me was fate, where I landed into a job where the culture, the competitive nature of being number one, and just helping their customer win was a personality connection for me,” explained Swan. “I had no real desire to run a machine, but I loved the culture. It’s been a blessing for me and it landed in my path.” He loves his job so much that it does not feel like work.

Now, Swan helps young people purposefully pursue manufacturing, and not find it by accident as he did. He encourages them to find a company with a culture and career paths that line up with their personality, and not just a job or individual task. For him, focusing on career pathways stimulates the mind to look beyond a paycheck and towards overall values. When the values of a company match those of the employee, that is where true love for the work lies, according to Swan.

He provides industry presentations to high school and college-level students, sharing Swagelok’s culture to





the young generation, but he'd like to reach kids at the middle school level. "Initially, I spoke with and recruited high school students that weren't planning on going to college, and if they were going to college, did not want to leave home so they chose a community college." He noticed that many were joining manufacturing simply to be employed without any understanding of what career pathways they could take. "To help steer the right-minded students, we want them to get some information at their disposal before they reach high school," explained Swan. "We want to fill the manufacturing pipeline with the right students, so we're not wasting their time, as they embark on their career or enter programs like MAGNET. This serves the broader manufacturing community."

Other than MAGNET, Swagelok is involved with eight other Early College Early Career (ECEC) programs in the Cleveland area, but Swan does not care which path students take as long as it is the best path for them. When they hire someone out of an ECEC program, Swan noticed that the retention rate after one year was significantly higher. ECEC programs give Swagelok recruits who are looking for a career, which helps them stay with the company much longer.

"It's been a humbling prospect that Swagelok created a position that provides the opportunity to help young adults with making informed career decisions," Swan said. "I help to point them in a direction that can lead them to a life-changing career opportunity. I see young people, coming out of these programs, getting job offers where they have the opportunity to build a rewarding career. It's gratifying to see."

# Damon Holmes

Principal

Ginn Academy

When Ginn Academy principal Damon Holmes went to college, his mind was on athletics more than education. He knew he wanted to continue playing football and going to college was the way to make it happen; deciding on a major was secondary. He changed majors until he took a chance on an education class as a way to earn a few credits. He loved the class and switched his major one last time to education.

“And 25 years later, I’m still in it,” said Holmes. His own experience, going to college for the wrong reasons, is a testament to why Ginn Academy works with their students to create individual life plans. The other reason is that after a decade as an educator, he realized that the educational structure was preparing students to pass state tests in preparation for college, but not preparing them for anything else.

“As I began to see students leave for college only to return without graduating, feeling they had wasted time and money and had no life plan, I knew we had sent them on a fool’s errand. We hadn’t taken the time to know the students, specifically how they viewed their future and how they saw themselves becoming a contributor to society. What exactly was their life plan? I knew we needed to change things.”

At Ginn Academy each student’s life plan is designed by a guidance counselor, an industry or college partner, and the student. Students take aptitude tests and a life coach goes over the results of the test with them. From there, the student and the life coach design a roadmap leading to the student achieving their goals. The exercise is driven by the student; the professionals are there to

support and guide, not to force them down a predetermined path.

When students fail to get admitted to MAGNET or have an interest that is not related to manufacturing, Holmes finds other programs and opportunities for them to pursue. “We have a number of partners, but we don’t have everything,” said Holmes. “We had a student who wanted to be a dentist, but we didn’t have a partnership with a dentist or dental program. So we called around to dental schools to see what we could do to help that student get introduced to the dentistry profession.” While the student attends classes at Ginn, Holmes and the other educators involved in the process will seek out the opportunities to help students with internships or other programs. It is very helpful to the students, because many teenagers are not aware of the intricacies of certain professions and the pathways to get there. Having educators do that work for them is a responsibility Holmes takes seriously.

“That’s our job. As adults, as educators, our job is to show kids as much as we possibly can, about what the world offers and help them figure out where they fit,” declared Holmes. “If we don’t do that, if all we do is focus on how well they do on standardized tests, then shame on us.”



The pandemic has meant that Holmes no longer sees students in person on a daily basis. Although he does miss them, he hopes the adjustments the academic sector is making leads to a post-pandemic conversation to re-imagine educational structures.

“(As educators) we’re in a service industry, and how we provide services should be routinely reviewed. It doesn’t always have to be bricks and mortar, we can rethink things,” he said. Questioning why students are taught certain things and not others, how they are taught, and the time it takes to teach should all be on the table, according to Holmes.

“I’d love to offer my students every possible opportunity within the walls of Ginn Academy, but space and financial constraints make that impossible. But if I know there’s another building or another school within the city or state or in another state, even another country, offering a class that students could benefit from, why can’t they take that class? During the pandemic we have learned that virtual learning is a viable option. In the post-pandemic educational world, I see us being able to access resources from every possible avenue and not being limited to the walls of our buildings or district.”

Holmes hopes that post-COVID the academic sector does not return to conventional thinking just because it is easier, familiar, and inexpensive. He feels that there should be more flexibility in how students learn because the economies of the future will require people to constantly adapt and think strategically. Passing a one-time standard test will not be enough.

“I’m really excited to be part of this change. With the few years I have left in this game, I hope to really make a difference by helping kids, and changing this whole landscape.”

# Jana Bernard

## Quality Inspector

Elyria Plastics

Every weeknight, Jana Bernard spends at least two hours doing quality certification, trigonometry, and calculus homework before going to bed at 9pm. This Lorain County Community College (LCCC) student cannot afford to pull all-nighters, because at 7am the next morning she begins an eight-hour shift as a quality inspector at Elyria Plastics. She started working there the day after graduating from high school.

“At work, I’m doing the rounds on the production floor checking everything. I do that about four or five times in that eight-hour period,” described Bernard. “I do a walkthrough with third shift in the morning and then a walkthrough with second shift so that we check up on each other’s work. And then I’ll put that in the logbooks where everybody can read it, every shift can read it, and the supervisor can read it too.”

By studying quality certification in college, Bernard can be hired by almost any manufacturer in the United States. None of this would have been possible without joining MAGNET in her sophomore year of high school in 2017. When a teacher told her about the program, she decided to try it out to see if she would like it. Her brother is in an apprenticeship program at LCCC, training to get his journeyman’s card, which made her want to study manufacturing even more. “He inspired me by telling me all the cool things he was doing at work,” Bernard said. They studied in the same engineering class during their junior and senior years of high school, where she was again inspired by some of the projects that he was working on. When her teachers saw that she was good at it, he encouraged her to complete the program. Today, they both work at Elyria Plastics.

Bernard acts as the eyes and ears for the company’s customers. In her role, she makes customers feel confident that the company will produce parts according to their standards. “Quality is the last stop before it gets to the customer,” she said. “We’re the final say on whether a part is good or not. If it’s not, we save it from being sent out the door.” Indirectly, this vital role makes Bernard part of the marketing department, because damaged or unacceptable parts will hurt the company’s reputation.

As one of three women in Elyria’s quality assurance department, Bernard knows how challenging it can be for women in the industry. “It’s not just about being a woman, it’s about being a 19-year-old woman, in a predominantly male field,” Bernard said. Her mother worked as a shipping and receiving manager for Shiloh Industries for 12 years. “She gave me a fair warning about the struggles when I first entered. She was actually really worried about me when I first started in manufacturing, thinking that it would hurt my self esteem, and that I would be just dragged through the mud.”

Being so young, Bernard has found it difficult to earn the respect of some of her peers, most of whom are men. At first, many thought she was a dilettante fresh out of



high school just looking for money. However, once they saw that she was really good at her job, they realized that she may have been fresh out of high school, but she knew her stuff. Still, Bernard admits that she has to be very strategic in how she does her job so that as many coworkers as possible continue to respect her.

“If a 19-year-old girl is telling you how to do your job when you’re 60, that’s not my fault,” quipped Bernard. “If you did the job right the first time, I wouldn’t need to tell you to fix anything.”

Observing how hard her mother worked as a single parent to support the family is one of the reasons Bernard is so focused on excelling at work and at school. “She worked 12-hour days pretty much my entire life. So I saw the struggle. I saw the exhausted woman plopping herself on the couch every night. I’d hear her complain about how her male coworkers treated her,” recalled Bernard. “It just makes me want to go in there with bull horns and kind of just pave the way so that nobody else can be treated like that. I don’t like seeing people get treated like that. So that’s why I work so hard and diligently.”

# Rahim Nichols

## Internship Coach

ECEC

The Early College Early Career (ECEC) program helps manufacturers find and train talent by connecting them with local high school students. As ECEC's Internship Coach, Rahim Nichols focuses on building foundational relationships with both the students and the program's industry partners. These relationships are key for developing and maintaining smooth and consistent communication with employers. Whether it is an employer letting him know about an intern's great day or their habit for tardiness, Nichols learns about it quickly.

"Once students start their internships, I speak with the employers on a regular basis," explained Nichols. "We receive feedback and monitor our students' progress using our Three-C Model: where can we coach, correct, and congratulate?" Nichols obtains these progress reports from employers during monthly phone calls. For example, an intern who completes a task and then picks up their phone until receiving further direction might receive a feedback of "correction." Nichols' job is to let that student know that instead of wasting downtime, they can demonstrate initiative by asking their supervisor if there is anything else that needs to be done, even sweeping the floor. By listening to this correction, the intern can show the employer their commitment and engagement.

"Whenever we get those coaching or correction moments from an employer, I follow up with the students and make sure that we're addressing those moments in a timely fashion," explained Nichols. "We help them with these soft skills in their junior year before they've officially started their internship, and then we continue to do the work during their internships as well."

When Nichols provides feedback to an intern, he approaches it from a positive and constructive angle, highlighting areas of success and opportunities for growth. He may congratulate the student on their overall demonstrated work ethic and enthusiastic engagement on the job as well as coach them in the importance of not coming back from lunch late. "We don't want the interns to feel like we're just trying to beat them down," explained Nichols. "We want to congratulate them, but also hope they see that there are some things that they need to correct at the same time."

Between the monthly phone calls, Nichols receives texts and emails from employers giving him snapshots of how interns are doing. These small moments of communication allow him to deal with problems in real-time, before a concern escalates. "I don't want to wait for a month to go by, then to finally hear about an issue that happened three weeks ago," Nichols explained.

He wants industry partners to know that he is there to support them as they support their students. These close relationships, which he built over lengthy phone calls and quick texts, benefit the interns because it gives them support as they are trying to get into manufacturing.



Nichols has only been with MAGNET since February 2020, but he has enjoyed seeing how enthusiastic students are about the program and manufacturing. As he got to know the students, and hear how the program has changed their lives, it encouraged him in his new job. When interns enter the workforce, they have the support of people who really believe in them.

“It really motivates us when we get great feedback from employers,” said Nichols. “We put that in our monthly newsletters and make sure our CEO hears those stories.”

# MANUFACTURING RENAISSANCE [MR]

**Building Partnerships. Creating Futures. Advancing sustainable development anchored in manufacturing.**

**Chicagoland, Illinois**

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## Brief Introduction, History, & Background

Manufacturing Renaissance (MR) supports youth and young adults in the Chicago Metropolitan area (Chicagoland) via multiple programmatic areas: Policy and Advocacy, Economic Development, and Workforce Development. Manufacturing Connect and Young Manufacturers Association — two workforce programs that fit under the title of Career Pathway Services — together provide training, preparation, and support to pursue and persist in advanced manufacturing careers. Beyond the training-based programs, MR focuses on network building with employers and social service agencies to create a supportive ecosystem to increase job resiliency and interest in career development.

MR's training programs emerged as a result of research completed in 2000 exploring the changes in the manufacturing sector and public education systems. Analysis showed that in Chicago youth of color, especially Black and Latinx, would have the most to gain from training and educational opportunities linked to today's advanced manufacturing sector. Research illustrated that beyond entry level jobs, opportunities in management and ownership of manufacturing companies could be a strategic vehicle for creating wealth and expanding equity in Black/Latinx communities across the Chicagoland area. This research, and programmatic response, was built on a long history of work in supporting manufacturing jobs going back to MR's founding in 1982.

In response to the research, initial programming was designed to be embedded in a public high school setting. Early successes and lessons learned, paired with struggles to find support amidst changing administrations and agendas, led to a shift in strategies in 2019

to the model MR uses today: a community-based program in partnership with social service agencies and manufacturers across Chicago.

## About Manufacturing Connect and Young Manufacturers Association

MR's Career Pathway Services programs are designed specifically to engage youth of color (in-school youth ages 14 to 18), and young adults (18 to 29), from low-income communities, to expand their access to career tracks in manufacturing, and increase their success on the job. Manufacturing Connect — launched in 2007 as a career pathways program embedded in a four-year high school — is now a 12- to 14-week technical training program that integrates three key elements (outlined below) to create a holistic approach to supporting the individual.

1. **Technical Training:** Participants meet two to three times a week, for 12 to 14 weeks with a credentialed instructor, in person (and virtually during the COVID-19 pandemic). The curriculum focuses on the skills necessary to obtain the National Institute of Metalworking (NIMS) Measurement,



Materials, and Safety<sup>1</sup> credential. Lessons include understanding applied mathematics, measurement tools, and blueprint reading, as well as machine and shop safety. Outside of meeting with the instructor, participants are expected to complete assignments on their own time. While completing the credentialing test isn't a requirement to graduating and getting help with job placement, the training is built in a way that when program participants start a job, or when they find the appropriate time to take the test, they are prepared.

**2. On the Job Experiences:**

Outside of the classroom, students participate in many different job experiences. MR has built a network of over 140 manufacturers in the Chicagoland area who offer trainees facility tours, job shadow opportunities, internships, and summer jobs. Through these opportunities students gain insights about what manufacturing looks like on a daily basis, learn about the culture of a company, and build connections with employers and their employees that can lead to employment opportunities.

**3. Social Service Support Network:** Parallel to the technical skills, Manufacturing Renaissance weaves in social service support. This starts with MR's dedicated staff. Instructors have a background in social work and develop deep connections with students by learning about their background, history, and life outside of the learning environment. The work readiness side of the program is not built around a defined criteria set, but depends on individual connection, relationship, and commitment to help understand each person's readiness. Manufacturing Renaissance has created a network of dozens of social service agencies who understand the complex social, emotional, economic, and

academic barriers of the youth and young adults MR serves. The combination of internal staff and support network actively aid in helping individual participants secure and retain employment.

**“Manufacturing Renaissance focuses on equal parts job placement, job retention, and personal development. You can't just leave a young person after they get the credentials or a job. This often means helping navigate both job integration and home life experiences. For many, they may be the first in their family or peer group with a full time job which creates family and friend dynamics that create all new challenges and issues. Job retention includes how to get along with your boss and your cousins and your friends that may be making it difficult to stay committed to a new career.”**

-Erica Staley, Executive Director

Manufacturing Renaissance created the Young Manufacturers Association (YMA) to support individuals that finished, or are finishing, the Manufacturing Connect program, as well as individuals who are pursuing careers in manufacturing regardless of their participation in a workforce development program. Established in 2016, YMA serves as a network and a program for young adults, aged 18-29, who are looking for their first employment opportunity, in between jobs, or still in training. MR organizes regular meetings and social events for YMA members to offer peer-to-peer advice and share working experiences. MR staff, the network of service providers, and fellow young manufacturers provide support for young adults transitioning into permanent employment, ongoing professional and life skills development, and balancing personal and work life dynamics. As of 2020, Manufacturing Renaissance now offers training similar to the Manufacturing Connect program open to young adults. There are over 75 members spread across the South and West side of Chicago.

<sup>1</sup> NIMS Credential Level 1: Measurement, Materials, & Safety. This certification validates that an individual has the fundamental knowledge of standard steel classifications and numbering systems, reading of precision measuring devices, shop and machine safety, and general machining practices, and inspection techniques.

## Keys to Success

In order for Manufacturing Renaissance to deliver their program and provide support successfully, several key aspects have to align. One of the most important is their network of about a dozen (with more being added regularly) social service agencies who help promote and connect youth and young adults to MR. This has been a win-win relationship. Social services agencies have expressed interest, and a need, to connect with career pathway supporters, and MR needs help marketing their programs. Once a connection is made, interested individuals are invited to an orientation event to learn about the process, programs, and outcomes. An orientation event brings together students currently enrolled in programming, members of the Young Manufacturers Association, manufacturing businesses, and trainers. The goal is to get potential participants to hear directly from those who have been where they are and gained from being part of MR's supportive community. Depending on their age, if an individual (aged 16 to 18) signs up to be in the Manufacturing Connect program they get support navigating the process of applying for Workforce Investment and Opportunities Act (WIOA) funding to cover the costs of participating in the Manufacturing Connect program. Individuals aged 18 to 29 may sign up for YMA-hosted training as grant funding permits.

Relationships with manufacturers are also fundamental. Not only do they offer jobs and career opportunities to people who become work-ready through MR's training, they play a role in ensuring the quality of the training and on-the-job experiences are consistent with needs in the industry. Over MR's history they have built a network of over 145 manufacturers, with a couple



dozen manufacturers who are very active in providing multiple types of work experience opportunities. These active partners make up an advisory committee that makes sure the programs stay relevant and impactful. In what could be considered an exchange, MR educates manufacturers on how to make their businesses more attractive to youth, especially young people of color. This is not a formal program, but it is a vital part of the success within their ecosystem.

**“Companies struggle to engage younger people. Manufacturing Renaissance educates employers on how to work with our kids. It is part of doing the job to increase the opportunities for kids and young adults of color.”**

-Erica Staley, Executive Director

Explicitly integrating trauma-informed care into all program operations is critical to supporting the communities MR has set out to impact. Youth and young adults from the hardest hit neighborhoods — in terms of economic disparities and social inequalities — in the Chicagoland area enter MR's doors and training programs. Trauma is their reality. Trainers, both those who focus on teaching technical skills as well as those who focus on work-readiness, are from



institutions a tool for community and economic development. Due to changing relationships within the school system, Manufacturing Renaissance had to evolve, and in 2019 they successfully established the model described above which saw 342 young people attending orientation events. Of those more than 70 signed up to participate in the programming, with 24 completed, 16 enrolled in college and 8 who went into manufacturing employment. On the policy side, as a result of MR's work with

these communities and can, and do, share personal experiences and insights about the barriers to finding career paths and stability. While staff can provide personal stories and be present when day-to-day issues arise, MR is also working to build a network of social services that provides more robust care than MR can provide directly. The awareness of the role trauma plays in individuals' abilities to access, and stick to, career development influenced Manufacturing Renaissance to hire a licensed social worker as their new program director.

## Outcomes

Manufacturing Renaissance's goals are to serve individuals and employers, shape institutions and policy, create impact in the short term by increasing access to college and career opportunities for individuals — all of which leads them to their long-term goal of helping communities of color exit poverty and access economic stability. MR originally developed its Career Pathway Services programs as a proof-of-concept illustrating how workforce development can be integrated into educational institutions, making those

Chicago Public Schools, they have become experts in facing and managing the barriers to various levels and manifestations of institutional resistance to scale new ideas, programs, and innovations. MR has taken this expertise and delivered it to the manufacturing community and policymakers through the [Realizing Inclusion and Industry 4.0 conference](#), which brought together teachers, industry leaders, and decision makers to learn about and discuss manufacturing and workforce training programs and new educational models. Manufacturing Renaissance also pushes for policy change via the Chicagoland Manufacturing Renaissance Council, which represents both the private and public sector: manufacturing companies, labor movement groups, nonprofits, government agencies, educators, and community and economic development leaders.

**“To scale impact there needs to be an integrated education system, one that brings together the school system and workforce development landscape. There is currently a divide that says while in school you are in the education domain and a month later, after graduating or leaving school, you are in the workforce domain. As a systems thinker I want to explore policies that get education and workforce on the same side, and from the beginning, help people learn about careers and what is possible, and get youth and young adults connected to social services, personal development and career development programs.”**

-Erica Staley, Executive Director

## The Future [Scaling]

In Chicagoland in 2018, there were approximately 58,000 jobs that went unfilled in the manufacturing sector.<sup>2</sup> MR admits no one program will be able to single-handedly fill all the jobs in that system, and that it will take many workforce development organizations working on this task. MR would like to double or triple in size as a program over time, through an ongoing process of prototyping program designs and strategies for successful engagement and placement of BIPOC youth in the sector. With this long term growth in mind, for 2021 MR's goal is to increase their direct training enrollment by an additional 50 percent.

Manufacturing Renaissance's scaling process is focused on direct expansion of both programs, increasing enrollment in direct training the upcoming year, and through leveraging insights and impacting policies. On the policy front, MR is pushing for innovation within Chicago public schools, changing how different "pipelines" create different funding barriers, and getting the political systems in place in Chicagoland to advocate for these programs. These changes require a shift in thinking and behavior in the form of resource allocation, at the individual elected official level. MR is translating their on-the-ground lessons learned into policy recommendations and strategies to increase resources to scale the training, increase on-the-job experiences, and build a more robust, trauma-informed social service safety net for youth of color, especially those that are Black and Latinx.

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<sup>2</sup> Revitalizing Manufacturing and Expanding Opportunities for Chicago's Black and Latino Communities [https://d4937ac3-176d-43e2-b62d-fb4a5b456873.filesusr.com/ugd/a1c52b\\_5fabdddc72984563b2408b9fc12b98e6.pdf](https://d4937ac3-176d-43e2-b62d-fb4a5b456873.filesusr.com/ugd/a1c52b_5fabdddc72984563b2408b9fc12b98e6.pdf)

## Dee Dee Jones

Industry Coordinator

Manufacturing Renaissance

Spend five minutes with native Chicagoan DeeDee Jones and you'll notice her love for connecting people to opportunities in manufacturing. As Manufacturing Renaissance's Industry Coordinator, she's effective at building relationships with both trainees and companies.

When she was a business major at Lewis University, she worked many menial jobs. Wanting stability, she turned to manufacturing.

"I would go to school during the day as a full-time college student, and in the evenings I would go to work in manufacturing. Once I started, I fell in love with it," recalled Jones. Working full-time gave her the financial support that she needed to put herself through college. "In that job, I learned the struggles, as an employee and as an employer." Her experiences in manufacturing made her yearn to become a decision maker in the industry. That's how she found her passion in human resources.

Jones encourages youth to enter manufacturing by showing them examples of young people just like them with successful careers. She emphasizes salaries, reveals the pathways from entry level to management, and underscores the mobility they get from learning portable skills. For those who are less enticed by the potential for employment, she gets their attention by appealing to their entrepreneurial desire.

"You can start off in the company, learn some technologies, some processes and you can do this yourself," said Jones. "If you think it, you can build it, sell it and if it becomes profitable, you can become a manufacturer." Jones shows prospective trainees the link between their hobbies and manufacturing. "I don't sell

manufacturing as the end all and be all," she said. "Use it to get to where you want to go. If it becomes a career, great. If it doesn't, it was an opportunity."

Before trainees leave the program with the hard skills they need to get a job, Jones holds three-hour one-on-one discussions with them to ensure that they have the soft skills to match. Regardless of their level of ambition, she takes specific actions. "I will take that ambitious person and put them in a company that will nurture that," said Jones. When trainees need more motivation, Jones helps them by teaching the company how to understand their personality and what drives them. She considers educating companies this way as her "sweet spot."

Jones is able to give actionable advice because she knows the companies well. "Matching a company's environment to a person's wants, needs, and personality type is key," she explained. According to Jones, building relationships with the trainees and with companies is very easy. It all comes down to three things: "Developing trust, confidence, and communication."

By doing the work, Jones helps trainees find the right company, shift, and position. She leaves very little to chance. "You could be at a great company, but in the wrong position," she said. "I communicate with them



their first day, week, month until they are 100 percent independent.”

Companies love Jones because when it comes to preparing trainees for the job they are about to take, she’s thorough, meticulous, and cares deeply about their success. “If I don’t have anybody, I’m going to tell them I don’t have anybody,” Jones explained. “That’s why I’ve kept relationships for 10-15 years with these employers.” This patience is what keeps employers coming back for more. “I’m not trying to push people. I’m trying to make connections,” she said. “I don’t throw spaghetti on the wall and hope that it sticks. I think that’s what employers appreciate about me. I’m not just in it for me.”

# Jim Piper

President

Matot

For programs like Manufacturing Renaissance (MR) to succeed, they need active partners who are willing to both teach and hire new graduates. Jim Piper is one of those partners. As president of Matot, a company that manufactures custom-engineered dumbwaiters in Bellwood, Illinois, Piper and MR have such a deep relationship that many students see the inside of his company even before they work there.

“We offer tours to high school students throughout the year,” said Piper. “Our doors are always open to having DeeDee Jones (Industry Coordinator) and her crew bring 20-25 kids through for a couple hours where we can just talk to them about the type of work we do.” When people drive by Matot, all they see is a nondescript building with no clue as to what goes on inside. When he invites youth in for tours, they get to see manufacturing in action.

“They can see sheet metal get transformed right before their eyes, working across our shop floor to a finished product that’s going to get shipped out the door,” said Piper. “We have fun equipment: we cut steel, we bend steel, and we weld steel. That catches their attention, and leads them to ask good questions like, *how’s that work? what’s that doing?* For me, it’s when they ask the questions like, *hey, what’s that guy making an hour?*” While Piper never divulges wage information, it is that last question that lets him know how interested the youth are in manufacturing. Normally, he responds by describing the type of lifestyle the workers can afford on a manufacturing salary that gives them the means to take care of their family and buy a home. That alone is enough to sway the students. “It’s nice to have those discussions with the youth,” said Piper. “So we’re always welcoming them back.”

Matot goes even further by hiring students for 12- to 16-week summer internships, and by participating in MR’s two-week job

shadowing program. “We’ll have students come for a couple of days, and just sit beside several different types of functions in our company. And that can be with engineering, accounting, customer service sales, and then on the shop floor as well, just to get different experiences within the company,” explained Piper.

Giving students access to opportunities is the key to exposing them to the many facets of a manufacturing company. That is how Piper has managed to hire so many students who go on to become effective workers. Although Matot is a family-owned business, with many veteran employees who have worked there for decades, it is the younger employees who make a difference to the observant students. “When we give our tours, we make sure to introduce them particularly to those younger employees,” Piper described. “*Hey, see this guy, or this young lady? In five years or eight years from now, that could be you.* It’s very relatable.”

Not only does Piper appreciate the work that MR does in preparing students for the workforce, he also could not set up new employees for success without MR teaching him and his employees how to relate to the youth. “They provide us with perspective as to where the





kids are coming from,” Piper explained. “Things like their familial and social situations. Yes, we know, these kids are primarily coming from the West Side and South Side of Chicago. But what does that mean? What are their impressions of manufacturing?” This information helps Piper figure out how to talk to new employees and how his company’s culture can nurture them so that they not only become skilled workers, but feel like a part of the Matot family.

For students who see manufacturing as a path to entrepreneurship, Piper believes that his company’s method of giving interns and new hires a taste of everything is beneficial to their growth. The exposure alone is enough to give them ideas as to what is possible. Highly-engineered and locally-manufactured products such as dumbwaiters can inspire the entrepreneurial interests of students.

“So all of those little touches can be helpful for kids. Whether they’re going to make an app, a delivery service, a commercially available product, or whatever it is, understanding some of the intricacies of how a business gets run is going to help them.”

# Kayla Cole

Trainee

Manufacturing Renaissance

If you love meeting people who are living out their passion, then meet Kayla Cole. When she joined the program at Manufacturing Renaissance (MR), she already possessed theoretical and some technical skills. A graduate of the Chicago Women In Trades program, she later got an associate degree in Integrated Systems Technology. To say that Cole was primed for action before joining MR would be an understatement.

Listening to her name all of the things that she learned before joining the program is impressive by itself. “Foundational knowledge in installing, repairing, maintaining, troubleshooting, aligning, and operating industrial equipment,” she listed. “Welding using stick (Shielded Metal Arc Welding), MIG (Metal Inert Gas Welding), and TIG (Tungsten Inert Gas Welding). I had my first exposure to blueprints, measuring devices, and hands-on assembly.” With all of that technical skill, why did she feel the need to join MR?

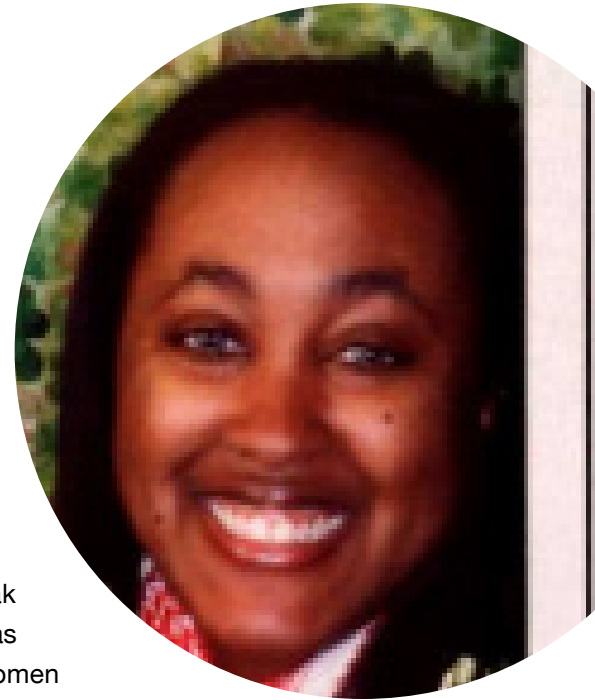
After completing college, she experienced a period of unemployment that challenged her to sharpen her talents even more. She submitted her résumé for feedback, participated in mock interviews as practice, and was disciplined enough to do self-directed studies of topics in AutoCAD, Excel, Programmable Logic Controllers (PLC), and Python. “During that time, the only thought that was going through my mind was continuous self improvement,” said Cole. She also attended a few job preparation boot camps, even ones that were loosely aligned with what she was looking for. “I had to do everything in my power to make myself an attractive candidate for a manufacturing position.”

If you think being so educated, but experiencing difficulty finding a job would have made Cole doubt herself, you

would be wrong. Such was her desire to make it, that she could not afford to let doubt sneak in. “When I was at Chicago Women In Trades, the first time I struck an arc while stick welding, that was it for me,” Cole recalled. “I knew that I was going into the great unknown, and everything that is going to be thrown my way, I’m going to overcome it. I’m going to excel at the task at hand. I’m going to finish this to the end, and I’m going to leave a legacy for those after me.”

When she read about MR on a Facebook group called Chicago Area Resources For Employment, Housing and Education, she seized the opportunity. “MR was not only a refresher for me, they also stressed foundational technical skill,” described Cole. She felt that in many ways, the training at MR expanded upon and broadened the scope of her previous education. “No program is redundant, improvement can always be found. And I highly recommend MR for all levels of manufacturing.”

For Cole, the advantage that differentiated MR from the job preparation boot camps that she attended prior to joining the program was its manufacturing focus. “I was having problems jumpstarting my manufacturing career, and this is where MR stepped in,” she explained. “In comparison, my prior experience at other boot camps was like having a toothache, but going to a chiropractor versus going to an actual dentist.”



Beyond her training, she sees herself developing a lifelong relationship with MR. MR is a source of support that she cannot get anywhere else. “I don’t have any family in manufacturing, and none of my associates are in manufacturing. So I’m literally a one woman show,” explained Cole. “It can be an isolating experience not having anyone to talk to about what you’re going through or even getting incredible advice.”

A young adult, Cole is only at the beginning of her career, but speaks with the wisdom of a sage veteran. Although she wants to become an Electrical Engineer with the skill set of a Master Troubleshooter, her idea of success is grounded in who she is. “Success to me, is ultimately about internal respect,” she said. “I display respect for myself in completing the job with accuracy, speed, and within budget constraints.”

For Cole, this internal respect outwardly looks like professionalism to others, and is vital for making it in manufacturing. “Sometimes you can look for respect from so many people, then you end up compromising yourself trying to please somebody else. Internal respect means I’m going to come here, and I’m going to do what the company has hired and paid me for.

# Torres Hughes

YMA Coordinator

Manufacturing Renaissance

In 2012, just a few weeks before graduating high school, Torres Hughes did something that few teenagers get to do. He got to speak on Capitol Hill in Washington D.C. about the value of manufacturing.

While a student at Austin Polytechnical Academy High School in Chicago, Hughes spoke to policymakers about the importance of manufacturing programs for teens. Little did he know, but in the evening of the day that he spoke on Capitol Hill, he would meet his first employer in manufacturing: Steven Kersten, president of Chicago-based WaterSaver Faucet Co.

“He told me that if college didn’t work for me when I graduated, I can come and work for him,” recalled Hughes. A week before graduation, Hughes did not feel ready for college nor did his parents have the funds to send him, so he gave Kersten a call. “I told him that I would like to work for his company,” Hughes said, “and he hired me.” A week later, right out of high school, Hughes was working in manufacturing.

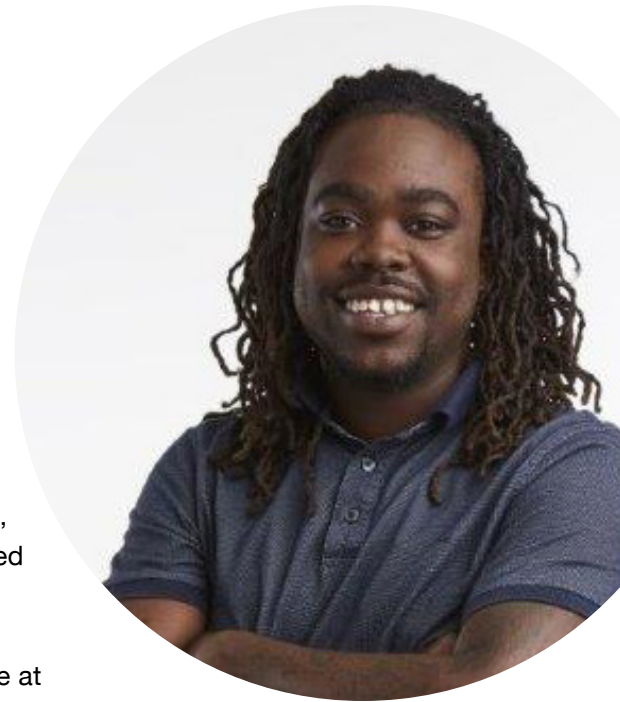
Despite his assertiveness in taking the opportunity, the first couple of months were not easy for the new employee. “I kind of got frustrated, it was very new,” recalled Hughes. “Getting up at six o’clock in the morning, working a full week, was kind of fresh for me, and so I quit.” Hughes spent the next several months contemplating whether he made a huge mistake. That’s when he turned to his mentor Bill Vogel, a staff member at Manufacturing Renaissance (MR), where Hughes had received training, shadowing opportunities, factory field trips, and advice since his sophomore year of high school. Vogel’s advice to Hughes: just ask for your job back.

Hughes did as his mentor advised, and to his surprise, Kersten re-hired him.

During his time at WaterSaver Faucet Co., Hughes worked as an assembler and a machine operator, but his time at the company was cut short six months later by a series of layoffs. With his first experiences in the industry under his belt, Hughes found another job at Freedman Seating Company just four months later, where he was exposed to a lot more of what manufacturing had to offer. “I started out as a machine operator on a press brake machine, then gradually learned more and went onto more advanced machines,” said Hughes. “A couple years later, I was offered a job to be a quality inspector.”

At Freedman, Hughes benefited from strong relationships with older coworkers who encouraged him and took him under their wings. Some of those relationships are still intact today.

As much as he was learning from the different departments at the company, he always had a passion to work in the community. Since he was six years old, he saw himself as a person who would give back to the place that raised him. He began to see motivating youth to join manufacturing as a way to do that. He turned to MR to see if he could volunteer with them, but shockingly they were not interested in him being a



volunteer. They wanted to offer him a paying job, which Hughes gleefully accepted.

“I could not have planned that myself. Sometimes the best journeys are the ones that just happen. It makes me more grateful,” Hughes said. “The program coordinator position kind of just fell in my lap. So I’m very appreciative of that.”

At MR, Hughes uses the twists and turns of his experiences to show youth what is possible. He is a walking advertisement for MR and the industry as a whole. “When I speak with youth, I let them know that I come from the same background that they come from. I grew up in Austin, on the West Side of Chicago, and I’ve been here all my life,” said Hughes. “The same things that they see, on a day-to-day basis, I see it too.” He sees his role at MR as being more than just a program coordinator. He is an inspirational figure in the community and a life changer.

The universal advice that Hughes gives to youth about joining programs like MR: “Take this opportunity to gain a skill, because the skills are going to pay the bills.”

# MENOMONEE VALLEY PARTNERS [MVP]

**MVP envisions a thriving Valley with a well-balanced mix of industrial, recreational, and entertainment uses that strengthen Milwaukee.**

**Milwaukee, WI**

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## Brief Introduction, History, & Background

Menomonee Valley Partners (MVP) is a business improvement district (BID)<sup>1</sup> whose mission is to revitalize and sustain the Menomonee River Valley — 1,200 acres in the center of Milwaukee. In the early 1900s Milwaukee was known as the “Machine Shop of the World” and the Menomonee River Valley was its engine. By the late 1900s manufacturing businesses had left the valley, leaving abandoned buildings and brownfields, creating an eyesore and leaving residents who live closest to the valley with fewer job opportunities. Since its founding in 1999 as a 501(c)(3) nonprofit, MVP has served as a lead convener and coordinator of public and private stakeholders who are contributing to the redevelopment of the valley. The initial focus was on building infrastructure — including new roads, bridges, and 1,000,000-plus square feet of green buildings — to attract manufacturing companies back to the valley, as well as cleaning up 300 acres of brownfields, and developing more than 60 acres of new trails and park space to improve wildlife habitat and water quality and to attract Milwaukee residents. Over their 20-plus year history MVP has taken on many different roles and responsibilities: they work to remove barriers to private sector redevelopment; they lead the creation of new amenities like public park space, bike, and pedestrian trails for employees and neighbors; they advocate and raise funds for new infrastructure projects, environmental restoration, and quality of life improvements; and they recruit new businesses while also helping existing businesses expand. As a result of MVP’s work and leadership, 52 companies have either started relocating or relocated to the Menomonee River Valley, creating over 5,200 family-supporting jobs.

As the number of businesses in the valley increased, MVP became an important member of the Milwaukee workforce development community. As a convener and organizer MVP is uniquely positioned to hear about the manufacturing business community’s need for talent, and the surrounding communities’ need for access to education and career opportunities. MVP learned that as new companies were locating in the valley, they were recruiting workers from the suburbs and other neighborhoods in Milwaukee, skipping over the residents living closest to the valley. Over their history, MVP has developed multiple programs that address equity and diversity in manufacturing and build new pathways between the businesses in the district and residents in surrounding neighborhoods.

## About Career Discovery Initiative, Neighborhood Connectivity, and JobUp

MVP works with over 100 companies, all of whom have voiced that they struggle to fill positions, have high turnover, and will be losing employees to an upcoming wave of retirement. MVP is leading the development of many programs to help alleviate these



<sup>1</sup> “Business Improvement Districts (BID) and Neighborhood Improvement Districts (NID) are strong partners in the City’s efforts to develop strong commercial, residential and industrial areas of the City that create jobs and a higher quality of life in Milwaukee. BIDs and NIDs are funded and operated by businesses, property owners and other community members located within each district’s defined boundaries.” <https://city.milwaukee.gov/DCD/BusinessToolbox/bids>



an organization would have events — for example, a career fair at a school, a summer festival, or a church-led community gathering — MVP staff would go advocate on behalf of their businesses. In the beginning MVP acted as a liaison for businesses, providing job applications and information from different companies to residents and community organizations. Over time neighborhood organizations started to learn they are an integral part of ensuring that their residents knew where job opportunities existed. Because workforce development is a big issue, and has been that way for decades, it's complicated for organizations to get involved

issues. For example, the Career Discovery Initiative, the Neighborhood Connectivity program, and the JobUp training partnership all work to introduce young people of color to career paths in manufacturing, help individuals living near the valley find job opportunities, and address the barriers that keep incumbent workers in lower-end jobs and help them move up into skilled positions. The longest running program is the Neighborhood Connectivity Program. The neighborhoods surrounding the valley are some of the lowest income neighborhoods in the city. As development in the valley progressed, MVP surveyed those working there and found they were largely not from the surrounding areas. When interviewed, business owners identified they didn't know how to hire from the neighborhoods and when neighborhood residents were asked about why they don't seek jobs there, they said they didn't understand how to connect to the valley. Some of this was due to a physical barrier: there are only a few ways to enter from its steep hillsides. Residents were literally driving over the valley and nothing was bringing them down into it.

Thanks to MVP there are now new ways of “bringing the floor of the valley” to those neighborhoods. MVP started by creating relationships with neighborhood organizations active in the surrounding areas. Whenever

because they don't necessarily know what to focus on or what role to play. Now neighborhood organizations can work with MVP who brings employers into their neighborhoods to share opportunities directly with their residents.

MVP's Career Discovery Initiative connects neighborhood youth to career paths, mentors, and hands-on learning. The program started about seven years ago when the superintendent of a local school district spoke up at an event with manufacturing business owners in attendance about the huge divide between business and youth. MVP responded to this call to connect and organized many business owners to develop tours of facilities in the valley. The first school invited was the high school closest to the Menomonee Valley; now the Milwaukee Public School system, charter schools, and private schools participate. MVP built the initiative for kids and teachers who wanted to understand how what they're teaching and learning relates to a career. Teachers complete a survey about what they teach and MVP staff work with companies to find ways during the visit to connect what they do to what is being taught.





The tours have also impacted the companies as well. A Black female student was passionate about being an engineer, but when she was on a tour, she didn't see any women working as engineers. MVP shared this experience with the factory owner and they took the initiative to connect the student with their lead engineer, who is a woman but was out that day. This inspired MVP to create a women's mentorship program connecting women working in manufacturing in the valley to young women interested in engineering, manufacturing, real estate, and skilled trades. The tours continue to be successful with close to 40 companies participating since they began. And tours continue to spark new possibilities, such as training for teachers who want to find more ways of connecting classroom learning to skills needed in manufacturing.

JobUp is MVP's newest initiative, the idea for which came about through a collaborative effort to apply to JPMorgan Chase's Advancing Cities challenge. MVP, Havenwoods (another business improvement district), YWCA, and Milwaukee Area Technical College (MATC) worked together to respond to two city-wide issues: high unemployment and low numbers of people of color in higher-level positions. Their response to the challenge was informed by a third factor: a high dropout rate in technical training certifications. The theory the partners came up with was

this: if they could develop a way to increase the success rate of students completing technical education, they could help increase access to entry level jobs and increase the opportunities for workers to climb the career ladder, while also promoting lifelong learning. The solution they proposed is to provide wraparound services like transportation, child care, and health care, because when those needs aren't met one's ability to commit to and succeed in education is drastically impacted.

The proposal wasn't chosen as an Advancing Cities winner, but the partners believed this strategy was worth pursuing and found local funders who provided capital to pilot the initiative.

While the JobUp program is still very new, a coordinator has been hired and is working between all the partners. Further, MATC is offering free tuition for qualifying students either coming directly out of high school or with six or fewer credits (the primary funding source for the program is a federal Pell Grant for low-income students). MATC and MVP are working together to understand what are the hard-to-fill positions for companies, while also understanding what students want to learn. And, MVP is working with employers to hire workers, train apprentices, and collaborate with community partners to develop a network of wraparound services for students.

**“Fifteen years ago, and even 10 years ago, if I had different companies in a room together, I got so much resistance to talking about collaborative solutions because they saw each other as competitors. Whereas now, they all see their purpose, and how, if we don't work together, we won't solve some of those deep workforce challenges that many of them have. So now we're working together, people are sharing solutions.”**

-Catrina Crane, Director of Workforce Development & Business Solutions



make it easier for more companies to get engaged and become part of the dialogue.

Corey Zetts, MVP's Executive Director, identifies sharing lessons learned and partnerships as keys to success. MVP has been able to get feedback from individual businesses about how their workforce programs are or aren't working. This willingness to engage and be part of the process makes it much easier to work collaboratively with all partners.

Partners that are willing and able to look at the whole picture also make a difference. MVP has been able to bring together environmentalists, industry leaders, health care advocates, and city agencies to work together and understand their roles and responsibilities to move the larger Menomonee River Valley redevelopment forward. MVP has seen the same success in their workforce development programs by getting employers, educators, and residents to understand the issues that exist within the current system and how everyone needs to be engaged to build a new system that is equitable and accessible.

## Outcomes

MVP measures outcomes based on how well they are breaking down barriers that exist between the valley's manufacturing district (predominantly white in leadership positions) and the residents of the surrounding areas (predominantly African American and Latinx neighborhoods). MVP tracks the number of valley businesses and neighborhood residents participating in community-based job fair events and neighborhood tours; the number of businesses investing in MVP tools that reduce barriers to employment; and the number of valley employees and neighborhood youth participating in Career Discovery Initiative programs. In 2019 more than 300 students from over ten local high schools and middle schools toured valley businesses, spoke with

## Keys to Success

Catrina Crane, Director of Workforce Development & Business Solutions at MVP, said that one key to success is having businesses who are willing to pilot programs. In just the past few years, MVP has seen companies become more willing to look within their own walls to say: "We see that there's a need for change, but how do we make that change?" Employers are not as rigid as they were a decade ago and they want to be a part of the solution. MVP and partners have found ways to model collaboration and an openness to try new things, to see what works and what doesn't, knowing that you need employers to make something like this work.

Companies are also opening up about their own internal issues, especially ingrained bias and racist policies. Historically these conversations have been hard for companies to have and individuals have been afraid to talk about their own bias. Having a few companies willing to do the work has led MVP to explore how to support those conversations across more companies. In fact, it's also led MVP and YWCA to develop ways for employers and workers to talk about these issues and develop training for companies. MVP is in the process of creating a "circle" where individuals from various businesses can come to speak about some of these challenges or concerns. The purpose is to create a space for individuals to learn, reflect, and bounce ideas off of each other. MVP believes these new strategies will

professionals, and learned how their current interests connect to meaningful careers in the valley. The Young Women in STEM program brought more than 50 students to meet with valley employees in the trades, engineering, manufacturing, and other careers with low female representation. And MVP collaborated with Near West Side Partners and Layton Boulevard West Neighbors on Neighborhood Job Recruitment events in each neighborhood. By bringing the job recruitment event and opportunities directly to the neighborhoods, the organizations helped to connect valley companies and residents in a new model of job fair.

Just as important, but harder to measure, is how well MVP and partners can increase awareness of the systemic issues that impact companies and residents and then create change. For example, through the JobUp program, outcomes will be measured on how well students are supported. This has led to organizing teachers and employers to discuss what a new apprenticeship model could look like, building a model that is responsive to both the needs of the worker and the needs of the company. A student's ability to complete higher education without debt is also an important outcome. Working with students in high school to earn college credit and then getting them into the MATC Milwaukee Promise program to continue their education creates a pathway for debt-free education.

Another example of hard-to-measure outcomes relates to trust. A new worker isn't going to trust an employer who says they have opportunity for upward mobility when the employer's policies tie promotions to seniority. MVP is learning how to work with companies to adjust these strategies, a practice which negatively impacts the newer, mostly people of color workforce that is just now accessing jobs in manufacturing. MVP is collaborating with the YWCA to develop training programs to help companies understand and incorporate new strategies, particularly around race and gender, that promote based

on an employee's ability to be respectful, a good teacher, and someone who supports other workers. MVP is also developing strategies to uncover talent in the incumbent workforce that could benefit from more education — both in new technology and in managerial skill sets to help them move up in positions and become culturally competent leaders. If the incumbent worker doesn't have a college degree, they can benefit from the MATC Promise program. This benefits the employer because they don't have to pay for their employees' training, but it does require them to find ways of being supportive and flexible to help their employees get to and be successful in the classroom. Both sides build trust in this situation: an employer shows support by making adjustments to expectations and providing time to learn, and employees show they are committed by bringing new knowledge back to their employer.

**“The goal is always to learn and share. If we have an idea for a program we pilot it, learn from it, and build on its success. We can then expand it throughout the valley, but also throughout the city. We are one of seven Business Improvement Districts and we share our learnings with them. Through continued engagement with the Urban Manufacturing Alliance and the Century Foundation, other Industry and Inclusion members, and other partners, we continue to learn how we might incorporate other strategies to scale impact.”**

-Corey Zetts, Executive Director

## The Future [Scaling]

MVP's process of piloting then expanding throughout the valley (and then throughout the city) has already been successful, and they are focused on continuing this process. MVP will continue to find ways to increase employer and resident participation through their relationships with the other six industrial Business Improvement Districts (BID). Together, the BIDs have become a city-wide learning network which allows many different types of experimentation and understanding. This network is also benefiting MVP partners. For example, MATC and the YWCA are also scaling their

engagement with Milwaukee residents and business owners as programs grow beyond the valley.

Milwaukee is one of the most segregated cities in the nation, and MVP staff know firsthand that people are afraid to have conversations about systemic racism. MVP also knows in order to increase participation in building new workforce strategies which promote diversity, equity, and inclusion, they have to find ways to open dialogue with communities and employers. To support this, MVP is creating Valley Talks, a monthly opportunity to connect on various issues within their community, creating what MVP believes will be another bridge into opportunities.

The future of MVP workforce programs is all about seeing more Black and brown individuals in management and ownership positions at every company in the valley. This means helping existing employers have a stronger voice and understanding of their role within the community. Scaling is also based on increasing awareness of what is happening in the Menomonee Valley and in the surrounding neighborhoods. MVP wants the valley to become the greatest place to work in Milwaukee for working families. They want families to be proud of living in the neighborhood and they want to see parents promoting jobs in the valley to their children.



## Shellie McKinney

Human Resources Business Partner

Rexnord

As the Human Resources Business Partner for Rexnord Industries, Shellie McKinney's strength is her love for people. When applicants come in for an interview, she puts them at ease with her mellow demeanor.

"I'm not like other HR people," said McKinney, whose office contains a disco ball, a gift from a co-worker after a discussion about McKinney's favorite music genre. It has been a fixture in her office ever since. "In HR, people can be so stiff, lacking personality, and straight-laced when interacting with the workforce. I like to show my personality, and by doing so it helps people to relax and be a little more comfortable with themselves."

When McKinney began her career in HR, she was often the only person of color on the staff, so she felt pressured to fit in. As she worked for companies with more diverse workforces, she became more comfortable being herself at work. She connects with employees by being authentic while coaching and counseling them around their issues. With applicants, she is not afraid to critique their employment search habits, even if sometimes that seems old fashioned to her colleagues.

"Some of my other supervisors will laugh at me because someone might come in with a hat on, and I'll ask them to remove their hat," laughed McKinney. Like a relative who loves her family, McKinney knows how to show love even as she is correcting applicants. "There was one young man at another company that I worked for who knew the company dress code was business casual. He was expected to wear khakis and a shirt, but said he didn't know how he was going to make it in this job, because he didn't have any casual clothes. So I took him over to the Goodwill next to our building, bought him a

couple pairs of pants and a couple of shirts. He was so happy, and I would like to think that me doing such a small thing made a lasting impact on him. I left that company so I don't know how successful he was. But I think that planting that seed may somehow grow into something down the road for him."

This type of gesture is what distinguishes McKinney. She is not afraid to spend a little money to help an applicant feel good at work, but one of her more helpful gestures did not cost her a thing. When a young applicant let her lack of a high school diploma dash her hopes of succeeding in manufacturing, McKinney became her biggest cheerleader.

"When we interviewed her, she just seemed to have so much personality and potential, way more than what we were hiring for. I felt that she possessed more than what an assembler required," recalled McKinney. The applicant was only in her late 20s, but felt too old to return to school. McKinney convinced her by sharing her own journey of going back to school at the age of 30, spending the following ten years getting her education.

"When I started telling her my story, it was like a light came on in her," described McKinney. "Some of the things that I have been through in life, I have used as encouragement for other people. So I told her, we're



going to go ahead and hire her, with the condition that she get her GED. I gave her little small goals to reach and she did that. She got her GED, enrolled in a technical school, and now she says that she will invite me to her graduation. She was just thankful to have somebody in her corner encouraging her.“

McKinney’s love for her colleagues and helping them succeed is why Rexnord loves her, disco ball and all. She believes that even if she did not have a job, she would be doing something to improve lives, one person at a time.

“The reason I really like Rexnord is because when I interviewed here four and a half years ago, I told the hiring team, the person that you’re talking to today, is the person that you will have here, next month, next year, and however long,” explained McKinney. “I’m not coming in here, trying to say the things you want me to say or act a certain way. I want you to know that if how I am now doesn’t fit into the company culture or the climate, then it’s not going to be a good fit long term. So they knew who they were hiring from the beginning.”

McKinney loves that she has a platform to build, inspire, encourage, and give hope to job applicants and employees. Though her platform is small, it provides people with a much needed second chance and opportunities for advancement that they did not know were possible. She finds it challenging to support the underdog, but knows that they just need someone to coach them with love to get to the next level.

“Sometimes we need people to take a stand for those who aren’t in a position to speak for themselves.”

# Martha Barry

Chief Racial Justice Officer

YWCA

Martha Barry grew up in a small Wisconsin town of about 10,000 people. After four years of living in California, she decided to return back east in 1990 to make Milwaukee her home. She came back because she was attracted to Milwaukee's working-class roots and Midwestern character.

Resolving the underlying racism embedded in those narratives is another reason she settled in Milwaukee. For Barry, a lot can be learned about how a city views its people of color by listening to the glossy narratives it says about itself, particularly its hip areas and festivals, while telling a less than glowing narrative of the rest of the city.

Barry knows that change in Milwaukee is possible, because she is taking the journey herself. As a young white woman, she learned about race in uncomfortable ways, but it was necessary for her to understand. "I had a lot of folks of color that were way more patient with me than they had any business being," admitted Barry, "but they allowed me to start realizing the nuances of what race and racism meant. The more I knew, the more I realized how much I didn't know."

While Barry was getting her PhD and working in the HR department for a large company, she was interested in meeting white people who were on the same journey as she was – white people who were told their whole lives that race is not something they should concern themselves with, but nonetheless made it their concern to unlearn what they were taught.

"I was examining white anti-racist activists, and how they got there," recalled Barry. Her thinking is that by studying

white anti-racist activists to understand their formation process in addressing racism, it could provide examples for others. In over 14 years with the YWCA Southeast Wisconsin, where she is currently the Chief Racial Justice Officer, Barry has used that understanding to work to get more white people to be anti-racist. She creates curricula to teach professionals and institutions about the impact of racism on society and the steps they must take to be truly anti-racist. She also advises nonprofit and corporate leaders on ways to ensure that their organizations practice racial equity.

The difficulty of unlearning a socialized mindset is that our environment is built on racist principles. History is told, laws are passed, and regulations are upheld to the point where racism becomes the norm in a society. Even the city itself and the 'American dream' are constructed with this norm. Barry believes all people, and particularly white people, need to be honest about this. For industry, Barry works to encourage leaders and companies to have more conversation about race. Many are prepared to see racial bias training as the end point, but it's only the beginning.

"It's a challenge to help leaders understand that doing training, education, and awareness building is critical. But it is completely insufficient to change systems," she explained. "The YWCA is trying to get people to



understand, you can change individuals' behaviors and thinking, but if the organization is not willing to look at changing the systems, policies, and procedures that uphold its culture, it won't work." Many companies talk about supporting racial justice and equity, but they are not prepared for the discomfort that taking those positions will cause. "If you can get training in the door of your company, be prepared because it will sometimes light a spark. And are you ready for what that spark can turn into?" challenged Barry. "You've got to get people who are willing to go through that bumpiness to change racist systems."



# MANUFACTURING X DIGITAL [MXD]

Where innovative manufacturers forge their futures.

Chicago, Illinois

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## Brief Introduction, History, & Background

Manufacturing x Digital (MxD), previously called the Digital Manufacturing and Design Innovation Institute (DMDII), is one of 16 Manufacturing USA Institutes, a national network of centers tasked with advancing different aspects of Industry 4.0. Since opening in 2014, MxD has created a state-of-the-art innovation center for industry collaboration, with a 22,000-square-foot manufacturing floor used to demonstrate cutting edge technology, educate high schoolers, young adults, and incumbent workers, and support research and development of digitally-enhanced technologies. MxD is tasked with helping U.S. manufacturers develop new digital tools to improve different parts of the manufacturing supply chain from tracking materials and products to managing a factory floor to digital simulations that improve training and education. MxD's research and development work is supported through a multi-year commitment from the U.S. Department of Defense along with its industry partners. In about seven years of operation, its membership network has grown to include more than 300 businesses, academic institutes, and government agencies. In order to increase the adoption of digital technology and cybersecurity in manufacturing, as well as to create sustainable American manufacturing jobs, MxD is also involved in workforce development initiatives.

MxD Learn, MxD's workforce development program, is prioritizing under-resourced communities that historically have lacked equal access to high-tech career pathways. In 2019, MxD launched IGNITE at Waukegan High School, one of Illinois' largest Title 1 schools, at which 58 percent of the students are considered economically disadvantaged and minority enrollment stands at 97 percent.

MxD Learn began building out new frameworks to career pathways in digital manufacturing through a collaboration with ManpowerGroup.

Together, the organizations created a digital workforce taxonomy, a [report](#) documenting 165 new data-centric manufacturing jobs, running from “collaborative robotics technician” to “predictive maintenance systems specialist.” The taxonomy is a valuable resource for understanding skill sets that cut across industry domains and job titles, and which are specific to niches within a certain sector of advanced manufacturing. MxD Learn expanded its workforce development offerings when the factory floor manufacturing testbed opened in 2015. At MxD's facility in Chicago, students and workers can participate in a range of activities and events, from a factory tour to hands-on training. The factory floor continues to add technologies: since the innovation center opened its doors, additions include a digitized manual assembly testbed, a discrete manufacturing testbed, and cybersecurity for operational technology demonstrations. MxD partners AT&T, Autodesk, Fast Radius, McKinsey & Company, Microsoft, Siemens, and Software AG also have dedicated space on the floor to showcase innovative manufacturing technologies. Each additional testbed and demonstration within the larger factory floor increases the opportunities for MxD to advance Industry 4.0 and train future talent.



**“The employers in the region have a need to hire. Our aspiration is to engage young people in high school to get them excited and wanting to work for these employers. To do that we bring in the community college, the high school, faculty, and community leaders. We are trying to bring the whole community.”**

-Lizabetch Stuck, Head of Engagement & Workforce Development

## About MxD Learn

MxD’s early work with its digital manufacturing jobs taxonomy was followed by the Hiring Guide: Cybersecurity in Manufacturing. Released in 2019, it establishes a framework for MxD Learn. These resources provide an outline of what skills and knowledge need to be introduced via their programs, including IGNITE and FlexFactor. To create and deliver these programs, MxD Learn fosters collaboration and takes on the role of convener. To provide insights to translate into educational content, MxD can tap into its member network consisting of manufacturers, universities, nonprofit, and governmental entities in the Chicago region and beyond.

MxD Learn engages with high school students outside its headquarters through IGNITE: Mastering Manufacturing.

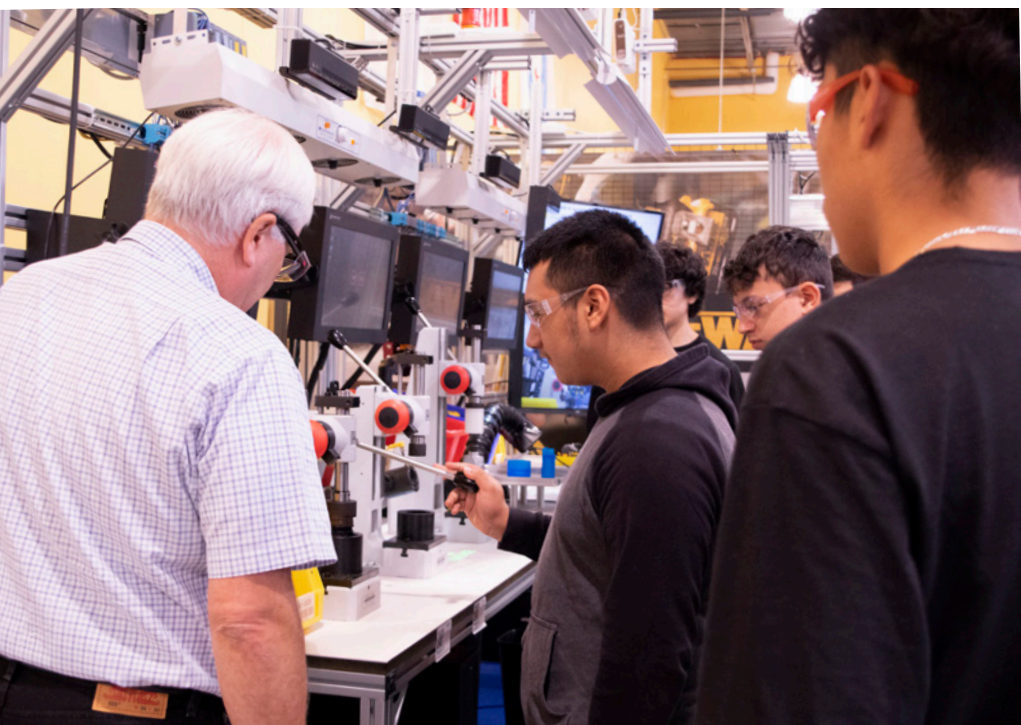
IGNITE is a three-year high school curriculum developed in collaboration with Detroit-based LIFT (also a Manufacturing USA Institute), community colleges, and high schools. IGNITE uses in-class, industry-based projects to teach high school sophomores, juniors, and seniors skills that prepare them for careers in manufacturing while establishing connections for employment opportunities. The curriculum is designed to prepare students to become multiskilled technicians, technologists, and engineers. Students starting in their sophomore year can choose to take manufacturing-focused elective courses. These classes go

beyond just increasing awareness; teachers are helping students learn through hands-on experience with technology used today in advanced manufacturing companies. The technology is accessible via two new labs at Waukegan High School, created by converting

an old woodshop. The funding came from a large investment from the community, including donations from Lake County Partners and the Siemens Foundation. Classroom and lab learning are supplemented by factory tours, demonstrations at MxD’s factory floor, and presentations by subject experts. At the end of their three years, the IGNITE cohort culminates in a team capstone project where students apply what they learned about digital manufacturing and cybersecurity to an industry problem showcasing their deep understanding of manufacturing materials, technologies, processes, and systems.

FlexFactor is MxD Learn’s next educational program. The FlexFactor program is based on a model developed by NextFlex (another Manufacturing USA Institute). The model was first tested in 2015, and in five years 3,209 K-12 students in the San Jose, CA region had





participated. In 2020, NextFlex developed a strategy to deliver the program virtually. In 2021, MxD and six other Manufacturing USA Institutes will implement the FlexFactor model, with each institute augmenting it to focus on their specific expertise. FlexFactor is similar to IGNITE as both are engaging students and creating awareness. The biggest difference is the time frame; FlexFactor is a single semester program, rather than three years. Students can participate by signing up for an elective, rather than being in a cohort. In that semester they are introduced to manufacturing careers through virtual tours, subject matter expert discussions, and technology demonstrations. The students take what they have learned, team up, and create their own product. The semester concludes with a pitch session to industry leaders and the Manufacturing USA Institute that hosts the program. In the spring of 2021, MxD will lead a collaborative process to create a FlexFactor iteration focused on digital manufacturing and cybersecurity content. And in the fall, the initial launch will be done with a regional high school as a test run.

graduate in 2022 and will use its membership network to create pathways for early career success.

**“The FlexFactor program empowers students to create their own solutions. Instead of us going to a school and saying this is what you need to know, students are building leadership skills demonstrating how to be innovative. Today’s high school students are digital natives and don’t have the fear of using digital technology. Their creativity in understanding and applying digital technology solutions can help show industry what is possible.”**

*-Michael Garamoni, Manager, Workforce Development*

## Keys to Success

Early in MxD’s development three goals were identified as framing success: programs must be industry-driven, engage with the community, and reach diverse students. These help frame a holistic approach to developing, executing, and assessing successful programs. MxD believes if these goals are met, it leads to the creation of both meaningful workforce opportunities for the individuals going through the training and meaningful service to employers looking to hire. Collaboration is necessary for all of MxD Learn’s work to come together.

This means getting feedback from external partners, MxD Learn staff, MxD team members on the technology research and development side, MxD members, and students. This process allows everyone to have a shared goal but bring different perspectives in achieving it.

One way to make sure they meet their goals is by having a career pathway or blueprint strategy in mind. This means creating a series of stepping stones a student can follow. It is relatively easy to create an event that creates excitement and interest, but if you don't create a place, space, or resource for someone as an immediate next step then that excitement, interest, and connection is likely lost. MxD is responding by hosting many types of events to get people introduced to careers in manufacturing, then offering the next stepping stone via workshops and demonstrations on its factory floor. For educators and administrators that get excited, they have the opportunity to bring IGNITE or FlexFactor to their school. This also applies to manufacturing businesses. It is possible for them to go through the same cycle: they see a technology, or hear about a creative workforce development solution, and get excited, but if they can't find an expert or supporter to help integrate new technology or hire new workers, then momentum is lost. For manufacturers the taxonomy report is an immediate resource, with the factory floor, membership, and opportunities to contribute to educational programs being second and third possible stepping stones to get support for adopting new innovation.

MxD considers its ability to innovate across the workforce development system as a key to success. A lot of workforce development support is offered only if there is data showing a historic or current demand for a skill set. MxD's industry engagement work starts with R&D and understanding technology in future factories. This work shows where industry is going and demand for future skills. Workforce development can be challenging because you are working to meet the needs of industry

and of middle and high school students. It requires understanding two very different stakeholder groups in the present, as well as predicting how industry will change and what people will need as they move to the next stage of their lives. This puts MxD in the position to find innovative ways to impact the system as a whole. By going into high schools, they are creating a demand for more educational opportunities and creating the next innovators who will define the next R&D and the design of the future factory. Over time, if successful, this strategy will create a positive feedback loop changing the way we think about workforce development. Students in high school will learn skills to operate technology while also finding new ways of applying it. They will take this know-how into a career and shape how the industry and individual companies operate, defining the next round of technology and skill sets to be taught to the next students.

**“I worry that if you only provide an introduction to manufacturing to a student then you are missing the chance to get them more deeply involved. You can bring a student into a manufacturing facility and they might say ‘I would really like this work’ but if you leave at the end of the day, and don't provide a next step their interest may be lost. We have to give them a next step, a pathway. We try to have our program support that model; we create the next step, then the next, and the next.”**

-Lizabeth Stuck, Head of Engagement & Workforce Development

## Outcomes

MxD's first implementation of IGNITE with Waukegan High School in 2019 included over 150 students. With COVID drastically impacting high school education, MxD pivoted to find ways to continue delivering education and opportunities, while also learning from its early findings. The original classroom teaching utilized a lot of self-directed learning, which had mixed success. Without the ability for students to be in lab spaces in their school, that strategy was made even more difficult. MxD pivoted to the development of individual toolkits

for each student, allowing them to do hands-on learning at home, while also attending group video classes. They are considering individual toolkits and a more directed learning strategy even when in-person learning resumes. This ability to test and change in a short amount of time — the program was running for only six months before COVID impacted their work — shows MxD’s willingness to learn and grow.

In the course of building relationships to create and deliver IGNITE, the MxD team learned that College of Lake County, just a few blocks from Waukegan High School, was in the process of building a new mechatronics degree program and lab. This connection led to identifying overlap between the IGNITE high school curriculum and the one that was about to be offered at the community college level. Together, they aligned course content to allow high school students to be dual enrolled and get college credit via their IGNITE electives. This early success has driven the exploration of new connections between 9th through 12th grade learning and community college education. MxD has since begun to work with the community college to develop an apprenticeship program in cybersecurity and digital manufacturing that is also in line with future College of Lake County offerings. When the new apprenticeship program is running, it will mean

Waukegan High School students have the chance to start their careers in manufacturing while continuing their education. It will also create new opportunities for students across the district even if their schools are not participating in the IGNITE program.

## The Future [Scaling]

A key question MxD Learn’s staff asks when developing any program is: Is there any opportunity to scale up beyond where we first start? One of the things that makes MxD valuable is that it is a national organization. The institute is looking at workforce challenges and solutions with a national lens while developing a community approach to creating and delivering a solution. This is why MxD has collaboratively worked with LIFT and NextFlex. All three institutes are able to test and learn in a specific location and then explore how to bring the learning models to other regions. This collaboration also means individual schools that have already adopted IGNITE and FlexFactor will have new courses and curriculum to offer, like digital manufacturing and cybersecurity.

COVID disrupted a lot of the hands-on learning that is necessary for skill development, but it also led to

a huge leap in virtual, distributed learning. MxD is exploring how to use virtual, synchronous, and asynchronous learning to connect their industry, government, and academic members, who are all across the country, with high schools and colleges within their respective regions. The institute is exploring how to provide some resources and tools that make it easier to access these programs. This opportunity could mean an individual young person could engage even if their high school is not participating, and it could offer employers and incumbent workers new training opportunities.



MxD is exploring what kind of platforms and resources are needed to provide increased accessibility to these programs.

MxD is quick to point out that the current and future success all depends on relationships. Relationships with students, parents, and teachers were often started with visits to the innovation center, which had over 1,000 visitors a month pre-pandemic. MxD Learn is in the process of rethinking outreach. Another set of relationships to build is with high schools interested in hosting IGNITE classes and cohorts. Waukegan became the first high school to participate in large part due to the Career and Technical Education (CTE) director who was very passionate about the opportunity.

He took the chance to work with MxD and ran with it. Expanding to new schools will require finding that leader willing to stand up and make it happen, or will require finding ways to communicate with schools about the opportunities to get teachers and administrators excited. Moving to other regions will also require understanding how curriculum development and adoption occurs, a factor that was made apparent when working through the initial implementation. MxD had worked with industry to validate the curriculum, but when it was presented to the high school, the high school also wanted to know that the curriculum was validated by the community college.

The last set of relationships that will be key to scaling is those involving industry partners. MxD has a very strong partnership with the Siemens Foundation, and with Siemens' cybersecurity office for North America, and they are exploring ways to expand that relationship and with other large industry partners. But there is no "one size fits all" way to work with partners, so it will take time and iteration. Successful partnerships depend on the sector, the company size, and the region.

There are a lot of factors that can either help or hinder engagement. MxD Learn is also exploring academic and nonprofit engagements. Since its launch, MxD has used collaborative research and development projects,



multifaceted programming, and strategic outreach to build its ecosystem of hundreds of partners from dozens of states, spanning coast to coast. This network forms a strong foundation to leverage relationships with stakeholders committed to driving America's digital manufacturing forward into education and workforce collaborations.

# Ashleigh Watson

People and Culture Director

MxD

Ashleigh Watson wanted to be a film historian, making sense of the past for us in the present and future through cinema. After getting a bachelor's degree in history from DePauw University in Greencastle, Indiana, then a masters in history and documentary filmmaking at Syracuse University, she decided that she really wanted to work with people so they could live out their stories as best as they could.

"After I graduated from college, I worked a little bit in the film industry, and then I transitioned over to HR," recalled Watson. "One of the things that's really unique about both industries is that you are always working with people. There's never a dull moment. You have to practice patience."

As a Chicagoan coming back to her hometown after grad school, her experience working in the city's film industry was fun, though it had some less than pleasant moments. "I still love the medium of film and storytelling, but I don't miss being on set and the 12-hour days."

Watson uses the people skills that she learned working on film sets in her current position as MxD's sole HR professional. Similar to on a set, where many relationships need to be managed for the sake of producing a film, Watson is building relationships with all 44 of MxD's full-time employees. She has only been in this position since June 2020, but she is already helping employees grow, even during a pandemic, by focusing on the employee experience.

"It's really important to have a relationship with the employees so they know that I'm a resource, not just for when something bad happens, but for their career



development," explained Watson. "We're a small team, but a dynamic and collaborative environment.

Anytime I'm screening for resumes or during interviews, I really hone in on the fact that this is not a typical put your feet up on the desk, answering emails all day type of job. You'll be doing a lot of work."

In general, what troubles Watson about the manufacturing industry is the focus on youth and not enough focus on experienced workers who are new to the industry. If Watson could make a career change from film to HR, then why couldn't any experienced worker go from being a bank teller to working as an assembler? Watson believes that we should listen to students and reach them where they are, regardless of age.

"I think it's important to at least know the motivations of those experienced individuals, and to see if that's something that we can meet," said Watson. "We always look for what 17- to 22-year-olds need, when there could be a 35- or 36-year-old who's really looking to change their career, and are a little bit more focused on what exactly they want out of a career."

Companies may feel that it is too risky to retrain an older worker, and it can be. However, people who still have 25 years of work or less left can be as committed or



more than younger employees who are just now finding out what they like, and have 50 years of work ahead of them. This is where understanding people from an HR perspective is valuable, because then you can find the workers in their 30s and 40s suited for manufacturing. How those workers are retrained while paying for a mortgage and a family is part of that risk, but Watson does not see why this cannot be fixed.

“Programs will have to work with academic institutions to sponsor adult students by giving them a stipend,” explained Watson. “Companies should be prepared to either front the costs, which may not always be feasible, or be more accepting to work with programs that offer adults or older students as trainees.”

Being comfortable sharing bold ideas like that is why Watson was drawn to MxD. It is a fast-paced workplace where ideas are respected, regardless of their origin. That is why diversity matters to MxD — not just racial diversity, but diversity of perspectives, especially in a global economy where manufacturers have competition overseas.

“Diversity is sometimes one of those things that people do when they feel like it. We don’t have the luxury to only care about diversity when we can,” said Watson. “It affects the bottom line and our ability to recruit the best candidates sometimes. In this position, I want to ensure that we are always at the forefront of any type of anti-racism, diversity, and inclusion initiatives.”

# Paul Mefford

Global M&E Learning and Talent Development Leader

The Dow Chemical Company

Paul Mefford has seen what a company can achieve when it strives to create a diverse workforce. As Dow's Global M&E Learning and Talent Development Leader, he is optimistic about the present, but admits there is still much work to be done.

"There's a lot of people that say the right things, but in this space, it's all about action," cautioned Mefford. "I'm thankful that I get to work for a company that puts so much time and effort into diversity."

Mefford goes beyond finding the right person for the right job. If that was all he did, Dow's success would be limited. Instead, he uses his purpose to guide him rather than his job description. "My purpose is to unleash the greatness of others. And I do that through service, purpose, and inspiration each day."

According to Mefford, companies fail at their diversity initiatives because they are not deliberate and specific about what they want to achieve. "It's about intentionality," said Mefford. "It's really easy to put things on slides and on paper; it's another thing to actually do it. The challenges that I've faced in my role are there were times when I didn't speak up when I know I should have, out of fear of retribution. I think a lot of people are still afraid to speak up. Having necessary and courageous conversations around race is absolutely critical."

At Dow, such conversations are done through "inclusion moments" at the beginning of meetings, where people share interactions they've had where they learned something about other people or themselves. This openness removes the fear that employees have when

talking about race, gender, or sexual orientation, and it becomes a learning experience for all in the meeting.

"That's how we've begun to shift the culture of our company," Mefford explained. "Originally, it felt like we were happy to check the box. And now, action has taken over."

Now that the reflex is towards inclusion, Mefford works to make sure it permeates throughout the company, and not only in certain pockets. When Mefford walks into meetings and notices that everyone looks like him, he feels it's his duty to engage his colleagues in conversations that get them to see the importance of taking diversity seriously.

"We talked about it in terms of a target, but you got to have support at all levels around it," he said. "It's not just about putting female leadership in place, or minority leadership, it's about putting the right people in the right opportunities, and letting them grow and flourish." Support around diverse hires is key to them succeeding in their position, and not feeling they have to be something that they are not. Mefford offers that support by being a vocal advocate for people of color and women in the company. "I'm more vocal with my mentorship, because there's so much untapped potential that exists."



Another area where Mefford has shifted Dow's priorities is in recruitment. HBCUs used to be a talent pool that they ignored, but that is no longer the case. Mefford realized that the culture shift within Dow would be solidified by ensuring that the new hires coming in fit the culture they are creating. "We had a bias around only recruiting at the top engineering universities within the United States and even abroad," admitted Mefford. "As we were recruiting from the same universities, we were targeting minorities, but our culture still was not changing. So we began to look at HBCUs by heavily investing our time and resources in STEM programs at HBCUs."

What other companies can learn from Mefford and Dow is that achieving a diverse workforce is a journey with no comfortable shortcuts. They are showing that without the desire of leadership to make that change happen, diversity plans do not work, and neither is waiting for the right moment to act.

"You can never get things 100 percent right, but you've got to constantly work on it. You need to make sure you're meeting the needs of the people where they are, through active listening, embracing them, their background, their heritage, and their culture. Not assimilating them, but allowing their strengths to come to life. We're at the beginning stages of that."

As the culture has shifted, Dow's diverse talent pool is beginning to talk about the company differently. Mefford hears those stories through mentorship and advocacy programs within the company, which is how he knows things are changing in the right direction.

"I'm more and more convinced that even if it's not my generation that gets it right, what I'm instilling in my children is amazing in that they don't see skin color as an impediment, but as a strength," said Mefford. "I'm waiting for the generation that grows up when that bias never comes into play, whether consciously or unconsciously."

# Rebekah Kowalski

Vice President, Manpower Manufacturing

ManpowerGroup

According to Rebekah Kowalski, until companies start viewing talent as a renewable source, they will never fill labor shortages. The Vice President of Manpower Manufacturing and Client Workforce Solutions believes that rather than waiting for the right fit or the perfect employee to come along, employers should invest in training existing workers. For 17 years, Kowalski has worked for Manpower in various capacities on the issue she is most passionate about: placing people in the industries they want to join.

“By 2025, we’ll be short 2.5 million workers in manufacturing. That’s a function of demographics and individuals retiring. If you layer into that the skills required, the gap actually gets to be quite higher,” explained Kowalski. What does she say to employers who still want to hold out for the exact match? “The numbers just don’t allow for that.”

She knows the reason employers treat talent as a scarce resource is because for a long time they were right. For the last few decades, as productivity and efficiency increased, the introduction of new technologies meant that manufacturers needed the right person with the right skills to keep up. Now things have changed so much that manufacturers cannot find people to fill positions. “If you looked back a year and a half ago, the data said there was less than one person available for every open (manufacturing) job that we had in the U.S.,” she described. “Even if we took all the unemployed off of the sidelines and put them into these jobs, you would still be short talent. That talent has to be treated as a renewable resource. We can’t accept waste in the manufacturing world.”

Through the Path Training Program that she started at Manpower, existing employees receive training for a better job, while working in their existing job. The program is expected to train as many as 200,000 people by 2025. “That’s our commitment to helping renew that element for those new jobs that are coming up. If we don’t do it, it’s no different than any other resource that’s in short supply in the world,” she warned. “The social and economic implications are pretty mind blowing. So this is one thing we have to get right.”

Kowalski also believes that employers should prioritize looking for employees who are curious, rather than the perfect match. She has found that employees who are willing to ask questions tend to be the ones who take initiative, and they also are the ones eager to learn. Manpower created their own online test to measure the learnability of recruits. She encourages manufacturers to market a career path, a journey, and a mission to prospective employees, and not only a job. The hiring process should bring someone into a company’s story so that their initiative becomes part of the company’s story.

“If you’re not telling a clear story, and you’re not providing space for people to provide their recommendations and take initiative, you’re missing it,” Kowalski explained. “This is a leader-led behavior.”



Everyone from the first line supervisors on up should be inviting people to participate on what it is you're building together. That's of critical importance."

Increasing diversity in manufacturing companies fails when placing people of color in companies is not done in tandem with ensuring that there is a support system in place for those new employees to thrive. If the culture is not one of inclusion, those new employees will get frustrated and leave. To reduce the likelihood of such outcomes, Manpower does internal surveys on every company they recruit for to determine if they are suitable workplaces in which to send employees of color. "Our market managers are the ones that have the responsibility to go in and validate that a workplace is safe for an individual before they make a placement," explained Kowalski.

When she looks at the current state of the workplace during the pandemic, she has noticed a change in public opinion that could benefit both employees and employers. She refers to a January 2021 Wall Street Journal article that talked about public trust shifting away from media and government during the pandemic and to the employer.

"The employer stepped in on COVID, stepped in on social justice, and stepped in on wages, because there wasn't clear guidance coming from anywhere else, and they still had to run their business," she said. "So this is actually a good news story for employers. You (employers) have this trust for some period of time. One of the best things you can do with it is demonstrate how you will help people walk up to that next set of skills that they'll need because you're bringing new technology into your manufacturing plant."

# Sean Manzanares

Senior Manager Business Strategy & Marketing

Autodesk

Sean Manzanares has worked for over five years at Autodesk helping them find the best talent on the planet. As Senior Manager of Business Strategy and Marketing for North America, he currently manages a team that includes members from North America, and recently managed a diverse team including teammates from Japan, South Korea, and China. His role, which is based in the U.S., also had him travelling to Asia three to four times per year until a few months into the pandemic.

His cultural background has helped make hiring diverse candidates a normal occurrence for Autodesk.

“As a person of color myself, I wanted to make sure that I had an inclusive look at who the candidates are, and are they able to bring their unique perspective to Autodesk,” said Manzanares. “I was fortunate to look into the different cultures and the different types of people that we have throughout the world at Autodesk.” His global perspective comes from working in sales at various companies for over 25 years.

“Earlier on in my career, I had an opportunity to take an international position in Singapore where I was a technical director of 13 countries in the Asia Pacific region. At the time, I came from America, and you have your North American blinders on a lot of different things,” admitted Manzanares. “That’s when I got my first grasp of diversity. I really was dropped into this situation where I traveled the entire Asia Pacific region. I did that for about two and a half years, and I loved it.”

Years later when Manzanares arrived at Autodesk, they looked at his Asia-Pacific experience and decided that

it fit what they needed. What was only a North American role expanded to include Asia-Pacific. Of course, Manzanares could not resist.

Autodesk has over 9,000 employees worldwide, with offices in Boston, Portland, Barcelona, Montreal, Dublin, Singapore, and many other cities. It is a company that is experiencing the fruits of inclusion, and for two years has been training hiring managers about cultural diversity. Manzanares felt right at home.

Autodesk got involved with MxD when Manzanares looked at a map of the United States and noticed a void in the company’s global community. “We have a big flagship headquarters in San Francisco, we have one in Boston, but we didn’t have anything in the middle of the country,” he recalled. “The Midwest is rich with manufacturing companies and talent. So as a member of the industry strategy team, part of my job is to work with partners and associations, and that’s how I researched MxD.” Now in their fourth year as an industry partner, Autodesk opened a 1,000-square-foot Generative Design Field Lab at MxD so that customers can see what their software can create.

In a strange way, Manzanares being the one to lead Autodesk to partner with MxD is a poetic coincidence.



He grew up in Broomfield, Colorado, the proud son of a blue-collar dad who prioritized the trades route over a traditional path to college.

“In high school, as a sophomore, I was into drafting on a board using T-squares, triangles and circle templates on vellum,” he recalled. “In 11th grade, I opted to go to Boulder TEC (Boulder Technical Education Center). So, I would spend the mornings in classes at high school, and then I would take a 30-minute bus ride to the TEC Center to spend the afternoon learning design and drafting skills and eventually I was introduced to CAD (computer-aided design) in 1983.”

The skills that he learned at Boulder TEC happened at just the right time in the evolution of CAD. The State of Colorado gave the technical school a grant that allowed them to install one of the first mainframe Computervision CADD4 systems in the U.S. He was learning a skill that was about to grow in demand for numerous industries that were relying on hand-drawings. “In 1984, I literally graduated on a Saturday and on Monday I started working in industry, making \$12 an hour doing CAD work at Ball Aerospace,” he said.

A portion of the credits he earned at Boulder TEC were transferable to Front Range Community College where he earned an associate degree in Mechanical Design Drafting while he was working as a CAD designer. In 1992, he made the jump over from the industries that use CAD software, to the companies making the software. That is where he has been ever since.

“People always ask me; do you regret not having a bachelor’s degree? And I reply, yes, I do,” said Manzanares. “However, after 25-plus years working in the software industry, a four-year degree may not have helped me sell software or taught me how to build relationships. Building a career path launched by a two-year trade school has helped me build a once-in-a-lifetime career, allowing me to work at and with some of the world’s best companies.”

# Donna Ruginski

Executive Director Cybersecurity Initiatives

University of Maryland Baltimore County

Standing in the way between cybercriminals and a rapidly digitizing manufacturing industry is Donna Ruginski, the Executive Director for Cybersecurity Initiatives at the University of Maryland, Baltimore County (UMBC). She's involved with both to help the manufacturing industry find the right cybersecurity talent, and to sound the alarm about dangers that lurk over the horizon, or even within company walls.

She and UMBC colleagues Dr. Nilanjan Banerjee, Professor of computer science and electrical engineering, and Dr. Keith Bowman, Dean of the College of Engineering and Information Technology, partnered with MxD because they see a labor shortage nationally and internationally in the cybersecurity workforce, especially in manufacturing. "I believe that this program for improving cybersecurity in operational manufacturing technology (CyMOT) will create a learning platform that can be done synchronously or asynchronously for professionals in manufacturing," Ruginski said. "Existing employees may need to take on new responsibilities, or they may want to move into a new role within their company that has a cybersecurity focus."

She believes that in the near future, federal compliance requirements will make every manufacturer in the U.S. take cyber attacks seriously, regardless of size. According to Ruginski, small- to medium-sized manufacturers are easy targets for cybercriminals.

"Small- and medium-sized manufacturers don't have departments focused on cybersecurity like large manufacturers do," she explained. "But these smaller entities still are dealing with the same challenges and

have to be able to address them in order to stay competitive."

She hopes that manufacturers are concerned enough by the frequent stories about hacking in the news to take action. If the U.S. government can be hacked, then a little-known manufacturer in the Midwest can also be hacked. Companies cannot afford to think that it cannot happen to them. "This brings to bear research that's required to enable manufacturers to operate even under attack, so that they don't have to shut down operations completely, but can continue to operate in some form."

CyMOT's unique cybersecurity for manufacturing training is a pilot program at MxD, and is funded by the Department of Defense. The plan is to use the feedback from manufacturers in this first phase to refine the course. "Our goal is to create a full, comprehensive curriculum that mirrors the MxD hiring guide," she said. "What's unique about this partnership is we have engaged an academic institution, the University of Maryland, Baltimore County, a leader in cybersecurity education; we also have UMBC Training Centers, who are experts in workforce development programs in cybersecurity; and we have MxD, who are experts in manufacturing and cybersecurity."





Of all the cyber threats that worry Ruginski, none is more troubling than ransomware. She fears that it is only a matter of time before a large manufacturer gets hacked through no fault of their own. Threats happen quickly, using stealth tactics, and are evolving. Without the new technology, the countermeasures, and the application of best practices, manufacturers are vulnerable.

“The ransomware threat that we face, because we’re inundated with emails daily, can so easily lead to a bad event happening,” warned Ruginski. “You have to be really on your toes about what you’re looking at, what you’re opening, and not becoming a victim, if you haven’t become one already.”

# 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

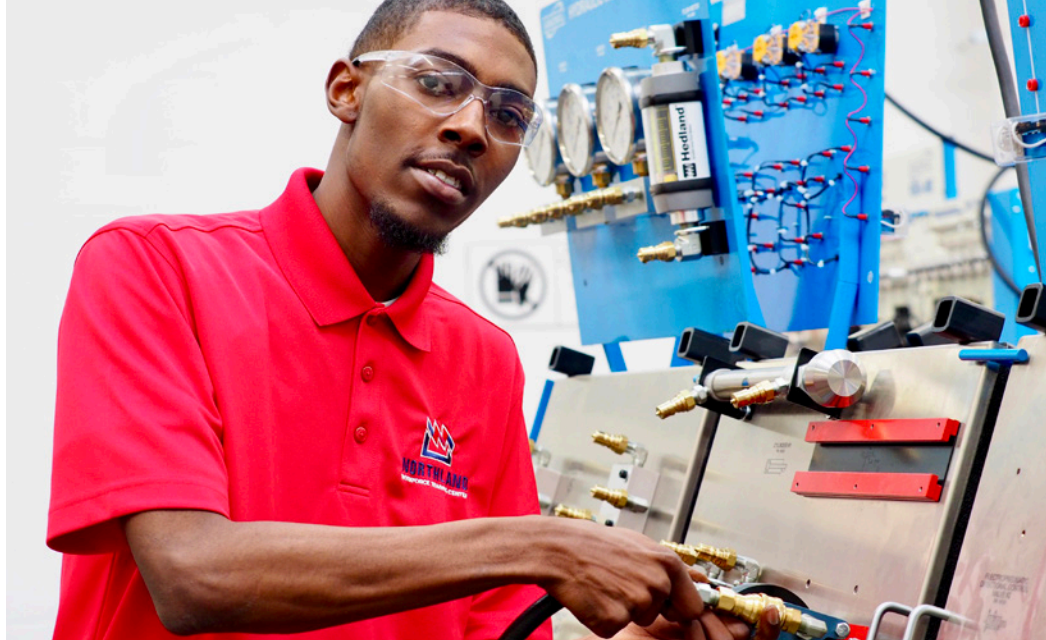
assessment, combined with the knowledge gained from its students' lived experiences, have not only increased NWTC's internal efficiency and efficacy, but has directly and positively impacted the recruitment, retention, completion, and placement of their students.

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.

# WISCONSIN REGIONAL TRAINING PARTNERSHIP | BUILDING INDUSTRY GROUP & SKILLED TRADES EMPLOYMENT PROGRAM [WRTP|BIG STEP]

Industry Led, Worker Centered, and Community Focused.

Milwaukee, WI

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## Brief Introduction, History, & Background

Building Industry Group and Skilled Trades Employment Program (BIG STEP) was founded in 1976 by representatives of the building trades in Milwaukee. BIG STEP's main goal is to increase the number of young adults, women, and people of color workers in the building trades. Through a Department of Labor grant in 2002, BIG STEP was able to partner with the Wisconsin Regional Training Partnership (WRTP) to develop new employer-driven work readiness initiatives. From the beginning of their collaboration, the two organizations developed multiple ways of supporting each other's work: creating funding opportunities for both organizations, developing strategies for engaging with unions and employers, and increasing efficiencies in training programs. They would eventually merge their boards and organizations in 2014.

WRTP was started in 1992. A wave of retiring workers, increased demand for manufacturing skill sets, and shifting global and local supply chains were impacting Milwaukee's industrial base in the 1980s. These factors pointed to the need to create two workforce development strategies: one that would help incumbent workers develop and maintain skills, and one for workers without manufacturing experience or knowhow. The Commission on a Quality Workforce, a State of Wisconsin initiative, studied the problems and recommended a partnership be created that brought together labor, business, and government. WRTP formed in response to the commission's recommendations. They received funding from the Annie E. Casey Foundation and took up the task of establishing a manufacturing training program for former welfare recipients and other low-income central city residents to gain access to family-sustaining jobs in manufacturing.

With support from former governor Jim Doyle in 2006, WRTP|BIG STEP established the Center of Excellence for Skilled Trades and Industry (COE) to scale and create programs in response to the reemergence of a skills shortage in Milwaukee's industrial sector. The

COE is located in the center of Milwaukee and serves employers, unions, current workers, job seekers, and community partners. The COE acts as a hub serving as a clearinghouse for job-ready candidates looking for careers in manufacturing, construction, and other related fields. Candidates can begin their career pathway there by learning about opportunities, and expectations, for careers in manufacturing and the skilled trades, learning about job placement processes, and applying for and participating in training programs. The COE also acts as a conduit between employers and newly-skilled professionals. Over the course of WRTP and BIG STEP's combined histories they have helped lead the renewal of the manufacturing base in the Milwaukee area while increasing people of color and female representation in the city's skilled trades and manufacturing.

**“When we started designing the IMT apprenticeship we brought all kinds of manufacturers to the table: food processing, motorcycle making, etc. It didn't matter if they were in plastics, metal, or wood, they were all at the table. We really wanted to make sure they were all at the table because we wanted to design something as a standard core curriculum for all advanced manufacturing.”**

-Rhandi Berth, Chief Innovations Officer

## About the Industrial Manufacturing Technician apprenticeship program.

WRTP|BIG STEP uses workforce development to help stabilize individual manufacturing businesses by helping businesses keep and upskill their employees. They are helping Milwaukee's regional economy by creating strategies which allow them to work with a lot of manufacturing businesses regardless of their specific sector or expertise. Different from most workforce development programs, they use a “reverse model” where WRTP|BIG STEP identifies immediate needs and job openings in manufacturing businesses and then tailors apprenticeships and training programs to address those needs. They work with employers and unions to complete needs assessments — through a one-on-one interview with the employer — to find out

who's hiring, laying off, or growing, who's investing in their workers, and who's struggling to find employees. WRTP uses the collection of assessments to understand how the manufacturing ecosystem is working.

WRTP|BIG STEP's newest support for helping employers respond to skilled worker needs is the Industrial Manufacturing Technician (IMT) registered apprenticeship program. WRTP|BIG STEP worked with employers, unions, and the Wisconsin State Labor Workforce Office to create the IMT apprenticeship. What makes the IMT apprenticeship different is that it was designed to cut across different types of advanced manufacturing sectors and jobs. WRTP|BIG STEP was able to develop the apprenticeship by bringing diverse manufacturers to the table who had a variety of job titles within their individual companies. The goal was to create an apprenticeship program that could be applicable to most careers in manufacturing and could be used to train individuals new to manufacturing and incumbent workers with years of working history. Working collaboratively, WRTP|BIG STEP, employers, and unions identified the basic skills needed for entry-level jobs and what is needed to advance along a career path. WRTP|BIG STEP worked with the Wisconsin State Department of Workforce Development, Bureau of Apprenticeship Standards to design a 3,000-hour hybrid registered apprenticeship with 264 hours of related instruction<sup>1</sup> that would be applicable statewide. They also worked with employers to create the Job Book which identifies approximately 2,700 hours of on-the-job learning that can be adjusted to meet more specific needs within a sector or job.



The IMT program was designed to be very adaptable. The related instruction focuses on safety, quality, production, maintenance, awareness, communications, and industrial math, knowledge, and skills which cut across industries and jobs. On-the-job learning is more focused on a specific industry or technology. The IMT apprenticeship intentionally aligns with existing youth apprenticeships, pre-apprenticeships, more advanced apprenticeships which take four to five years to complete, and union-based training in skilled trades. What this means is individuals who have already completed, for example, a youth apprenticeship, college credits, credentials, and or on-the-job learning, can count this learning and work history towards the IMT, where appropriate. This can streamline and reduce the training load on an individual, reducing the time it takes for them to get placed in a higher paying job.

Along with creating the IMT apprenticeship and other training programs, WRTP|BIG STEP works as a conduit between employers and their future employees. To find potential employees, WRTP|BIG STEP uses the COE, works with city and state workforce boards,

<sup>1</sup> "Related instruction is commonly provided in the classroom, but other types of instruction, such as on-line learning and individualized instruction are also permitted." Understanding Apprenticeship Basics - <https://www.dol.gov/sites/dolgov/files/odep/categories/youth/apprenticeship/odep1.pdf>

community and technical colleges, and is part of the Community Workforce Partnership (CWP), a formal network of community-based organizations developed by WRTP|BIG STEP. They also depend heavily on referrals from individuals who found employment through WRTP|BIG STEP. CWP members offer recruitment, screening, and employment readiness education and training activities, and collectively work on eliminating barriers to employment providing necessary, specialized services for community residents, including transportation, childcare, income, training, and support for re-entering citizens.

**“When an employer is hiring, we work with partners and search for people that are a reasonable driving distance to that employer. Then we work with partners on eliminating those barriers to employment. We have no geographic boundaries; we align and leverage a variety of funding sources so we can maintain our industry-led worker-centered model, and not be totally grant driven. We really try to look at it as: ‘This employer is hiring, these are the people that want to work there, so how do we make that happen?’”**

-Rhandi Berth, Chief Innovations Officer

## Keys to Success

Rhandi Berth, WRTP|BIG STEP’s Vice President and Chief Innovations Officer, identified two main keys to success: creating an industry-led and worker-centered training strategy that accommodates employees, and being part of a community-focused network of partners.

One program doesn’t fit everyone. Current and potential employees need different types of training programs depending on, for example, their previous education, work history, family care commitments, and accessibility

of funding. WRTP|BIG STEP supports a wide population, from existing employees with a four-year degree to job seekers who did not finish high school. This influenced WRTP|BIG STEP to find a workforce training model that is flexible and can incorporate individual worker history. Another influential factor is that in order to be an apprentice someone has to be employed first, creating a paid-to-learn opportunity making it possible for more individuals to participate. And the registered apprenticeship model doesn’t preclude workers from gaining other industry-recognized learning standards. For example, when working as an apprentice, you complete work hours, take college classes, and learn industry-recognized skills. This means that upon

completion a journey worker — the title given to an individual who has completed an apprenticeship — has an accredited certification, as well as industry-recognized credentials, and college credits.

Lastly, WRTP|BIG STEP has created a way to deliver training materials in a flexible way allowing employers and IMT apprentices to get started quickly and continue their learning year round, rather than wait for a semester or academic calendar to start. This is done by working with multiple partners — the main one being a local Manufacturing Skill Standards Council (MSSC)<sup>2</sup> member — who can be brought into a company to teach different elements of the 264-hour curriculum.

Working with partners is not always easy for employers to do when they are focused on running their business. For example, they don’t have time to know which college is teaching what. WRTP|BIG STEP acts as a case manager for each employer and an extension of their HR department. Each of WRTP|BIG STEP’s industry staff works with an employer to understand the full

<sup>2</sup> “Manufacturing Skill Standards Council (MSSC)®, a 501(c)3 nonprofit, is an industry-led, training, assessment and certification system focused on the core skills and knowledge needed by the nation’s front-line production and material handling technicians. The nationwide MSSC System, based upon industry-defined and federally-endorsed standards, offers both entry-level and incumbent workers the opportunity to demonstrate that they have acquired the skills increasingly needed in the technology-intensive jobs of the 21st century.” <https://www.msscusa.org/about-mssc/>

spectrum of what they need and then WRTP|BIG STEP helps them find the right partners, workforce, funding, and/or support services. If any question or issue arises with an employer, industry-specific staff members respond immediately with either internal offerings or recommendations for services provided by partners. This requires WRTP|BIG STEP to be up-to-date on what types of support providers are offering, who to contact, and what is expected of the employer in order to work with the partner. Keeping partnership relationships and information up-to-date, according to Berth, is probably the hardest part of their job. Non-employer partner relationships take a lot of nurturing and a lot of attention and it's not always fundable, but it's very important.

**“Our pre-employment participants were studied after two and three years of participation, to see how employees that were placed with WRTP|BIG STEPs involvement are doing. They had very high retention rates and very high wage placement rates. And that’s one of the things we’re known for: a reverse workforce model, starting with good jobs and helping employers become better and more inclusive.”**

-Rhandi Berth, Chief Innovations Officer

## Outcomes

WRTP|BIG STEP wants to not just diversify entry level jobs; they want to diversify higher level jobs. WRTP|BIG STEP identified that the best way to get women and people of color into those jobs is to get them more skills faster, which is why they created the IMT apprenticeship. The IMT apprenticeship, launched in 2012, scaled up quicker than any apprenticeship in the history of Wisconsin and it has been replicated in over 20 states. WRTP|BIG STEP is working directly with employers or an employer through a union representative to bring the IMT apprenticeship into new facilities. According to the Equity in Apprenticeships Report<sup>3</sup> published by the Center of Wisconsin Strategy, which studies workforce and opportunity through an equity lens:

“In 2016, Wisconsin had some 2,265 workers registered in all industrial apprenticeships. With 76 apprentices, the IMT accounted for a tiny sliver — just 3.3 percent — of Wisconsin industrial apprentice participants. But the IMT accounts for one in five of women in the state’s industrial apprenticeships: of the 60 women in industrial apprenticeships, 12 were in the IMT... The IMT is also performing much better than other industrial apprenticeships for people of color. ... [I]t accounts for more than one-in-four workers of color in all industrial apprenticeships (21 of the 82 apprentices of color in the state are in the IMT). ... Because the IMT is designed to be a launching pad into further training, in time the diversity of IMT journey level workers may help increase diversity in these more intensive (and traditional) industrial apprenticeships.”

For WRTP|BIG STEP, one of the most important outcomes is that unions *and* employers keep coming back to find workers and/or to bring in the IMT apprenticeship. When employers keep coming back it shows WRTP|BIG STEP it is worth investing more time and resources to help that

company. Increased connections between employers, community partners, unions, and WRTP|BIG STEP has created a more knowledgeable and more aware ecosystem. WRTP|BIG STEP has seen changes within employers, such as better treatment of their employees, an increase in job quality, and more diverse workers being given opportunities. It is difficult to pinpoint one exact reason for these changes, instead it is likely due to a combination of factors: people talk about their work experience with their unions and “high road” companies get more recognition as good places to work; employees are staying at companies longer; and data collection is more consistent, providing proof of success, helping convince manufacturers new changes are worth making. WRTP|BIG STEP now has employers approaching them, voicing interest in creating a better workplace and those that embrace the new approach are seeing the benefits.

3 [https://cows.org/wp-content/uploads/sites/1368/2018/08/Equity\\_in\\_Apprenticeship\\_IMT-2.pdf](https://cows.org/wp-content/uploads/sites/1368/2018/08/Equity_in_Apprenticeship_IMT-2.pdf)

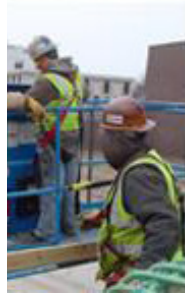
WRTP|BIG STEP's work has helped companies learn that investing in worker education is worth doing and that it is worth the extra effort of being flexible and creative to help their employees succeed while learning.



## The Future [Scaling]

In Milwaukee, there used to be large manufacturing employers that would take in an employee regardless of their work experience because they had the capacity to train in-house and prepare their own talent. Over time, those employees would leave for positions at smaller companies and move up the career ladder. The smaller companies benefited from the large companies' on-the-job training and employee development. When the large manufacturing firms started leaving the central cities 25 years ago, the small employers were left in limbo, wondering: Who would teach new people the skills to work in manufacturing? The whole industry had to change its hiring practices. Over the past 10 years, smaller companies have started stepping up to take on the responsibility, and new initiatives like the one designed and developed by the industry convened by WRTP|BIG STEP, the IMT apprenticeship program, and the ecosystem that supports it, are equipping small- and medium-sized manufacturers to train and maintain the next generation of workers.

WRTP|BIG STEP was recently awarded one of the U.S. Department of Labor's Closing the Skills Gap grants to promote industrial apprenticeships in Wisconsin. WRTP|BIG STEP is implementing a strategy to increase apprenticeships that has not been done before in the state. In Wisconsin, where other apprenticeship sponsors have created and manage union or non-union apprenticeships, WRTP|BIG STEP is operating with a joint labor management strategy creating programs that meet the needs of both union and non-union employers. As an industrial apprenticeship sponsor, WRTP|BIG



STEP has been approved for five occupations and they are becoming approved for more. According to the WRTP|BIG STEP's 2020 industrial needs assessment 80 percent of the 220 employers surveyed were more interested in starting or expanding a registered apprenticeship if a true industry sponsor was developed and available for them to utilize.

Further, the IMT apprenticeship program was designed to be iterated. There could be 30 or more different occupational IMTs without much effort because of everything that was invested into the development upfront. As an industrial registered apprenticeship sponsor, WRTP|BIG STEP can sponsor all kinds of apprenticeable occupations, whenever an employer wants one. WRTP|BIG STEP sponsors the development and brings the proposed apprenticeship before a committee of employers and unions who can approve or deny it; when denied, the committee provides feedback, giving WRTP|BIG STEP the opportunity to iterate and improve. When a new apprenticeship is approved by the committee and the Wisconsin State Bureau of Apprenticeship Standards, it can be implemented immediately by the employer that voiced interest at the beginning of the process. WRTP|BIG STEP takes action, recruiting applications through their networks, and providing employer support and educational partners that can offer existing skills training or the development



of new content to match the new apprenticeship iteration.

For WRTP|BIG STEP scalability is about doing a lot more of what they have been doing, and getting more individuals enrolled in the IMT apprenticeship program in the city, state, and across the country. This will require adding new partners and other interested industries and employers. What has allowed this increase is WRTP|BIG STEP's strategy to think about replicability, scalability, and efficiency from the beginning. WRTP|BIG STEP believes the program will scale itself because those partners that are already involved — employers, unions, community colleges — are helping it scale.

## John Luebke & Sheree Hurt

Operations Manager & IMT Journey Worker

Deltrol



John Luebke is passionate about working on the production floor, interacting with workers, and ensuring that products go out on time. As the Operations Manager at Deltrol, an electromechanical controls and hydraulic systems manufacturer in Milwaukee, he takes pride in giving the customers what they need from right here in the U.S.

“I’ve seen a lot of different parts come and go out of here, and sometimes overseas,” said Luebke. “We have a sister company over in Vietnam, and some of the reasons why they left is because we just couldn’t afford to do it here anymore. So I take pride in making sure the product that we currently have here stays here so that we can be competitive.”

If he speaks glowingly about manufacturing in the Milwaukee region it is because it gave him the ability to raise and support his family, just like his parents before him. Born in a family of six siblings, Luebke joined the army at the age of 18 and was stationed in Germany, but got to see much of the world. When he left the army, he got all of his education covered by the GI Bill, and saw Milwaukee as the best place for him to settle.

“Within a 100-mile radius is like 98 percent of the jobs in Wisconsin. I’ve been here since and I love it. I’m married with two daughters at home.”

Luebke approaches his job with a hands-on mindset, preferring to get involved in every piece that leaves Deltrol. He sees it as a way to keep people employed — including himself. When Luebke found out that a new cohort of apprentices would be working on a new valve

coming into the company, he had no idea that cohort was going to be all female.

“I got people here, that for two years, are probably going to be here because they want to get through this apprenticeship,” he said. “Now, I might lose them after that, because now they got a journeyperson’s card, they can go anywhere. From a company standpoint, we’ll teach them, they might leave us, but to a certain extent, we use their abilities to our advantage and keep jobs in Milwaukee.”

One of the women who Luebke depends on is Sheree Hurt. For eight years, Hurt has loved the camaraderie with her all-female team of coworkers. She is one of five female IMT Journeyworkers at Deltrol, which has been exciting for her.

“We have this new valve coming into the company, and the females will get a chance to work on it,” she explained. “We can do good work too, not just the men.”

Her family has been behind her every step in her journey, and admires the tenacity of her and the rest of the



women she works with. From her two college-educated children to her own mother, all of them pushed her to not give up. When Hurt goes to work everyday, she knows that her nieces, nephews, and cousins look up to her. They think it is impressive that she works in a factory.

Just as the women have been trained through the WRTP apprenticeship program, they now teach other women the same skills. Putting the all-female team of journeymen on new projects is a great motivator for getting more women into manufacturing.

Hurt realized things needed to change in the industry, when she signed up for the apprenticeship. Some of her male colleagues were discouraging and thought that it was not for women. “That pushed us all to get it done,” she said. “We were told that it was gonna be hard for us, and that we was gonna drop out. So we had to prove them wrong. It was hard, but we stayed in there.”

Now Hurt is part of the changing face of manufacturing by broadening its appeal to women and younger generations.

As a smaller company, Deltrol barely had the resources to train the women on-site, but Luebke believed that it was an opportunity they could not miss. He had to convince the executive management that this was in the best interest of the company, to help more people become journeymen. He believed the more the company got involved in training the next generation of laborers, the better it would be for the Milwaukee manufacturing scene as a whole.

The pandemic has meant that Deltrol cannot show off the work that these women are doing like they wanted to. With so much interest statewide in the all-female apprenticeship, showcasing their work to the rest of the industry and to girls in schools is something that will have to wait. For now, Luebke hopes that the women can continue to be examples for other women to follow, and hopes that other companies see the benefit to what Deltrol is doing.



# David Polk

Apprenticeship Director

Milwaukee Area Technical College

Just like his grandfather, David Polk is a licensed plumber. As a child, Polk knew he wanted to become what he could see — like his grandfather fixing pipes. His awareness of the privilege of seeing a family member in a trade is why Polk is a proponent of telling Black youth about manufacturing.

“If you can’t see the person that does a trade, and has a family-sustaining wage, it’s almost a moot point,” explained Polk. “In manufacturing, that person works behind the walls of a building, so you never get to put a face with the name of a tool and die maker, or a CNC operator.”

Polk believes that the manufacturing industry needs to create new stories about African-Americans in manufacturing. He questions if youth are aware that they are missing out on family-sustaining careers and the potential that manufacturing offers beyond just having a job. “Some tool and die makers, design specialists, and CNC operators can work themselves up to buying their own equipment, buying their own machines, and starting their own businesses,” Polk said. “But these stories are so obscure that no one gets to hear them.”

The reason Polk is so confident that learning a trade can lead to other opportunities is because it happened to him. As a plumbing inspector for the City of Milwaukee, Polk worked on numerous projects where he was the lead inspector. After 10 years in that position, he felt things had become monotonous and wanted to expand his horizons within the city into a management position. For that, he pursued a two-year degree in business administration and then a bachelor’s degree from

Cardinal Stritch University. He went on many interviews with the city after graduation, but never got hired for any of the leadership positions at the City of Milwaukee, so he continued working as a plumbing inspector. Years later, Polk saw an associate dean opportunity with Milwaukee Area Technical College (MATC) that both appealed to his inclination toward social good and desire for leadership.

“The woman who brought me in, Miss Dorothy Walker, was within years of her retirement and she made it a point to try to put African-Americans in leadership before her retirement,” recalled Polk. “I’m forever grateful to her for that. She saw something in me I didn’t see in myself at the time.” She did more than hire Polk: she also became his mentor. Walker started out as one of the few African-American female welders in Milwaukee. She became a welding instructor, and worked her way up within MATC to eventually become a dean.

“Hearing her story, after she had brought me on, gave me even more of a push to create these stories,” said Polk. “I want our youth of color to see and hear these stories.”

Now Polk is MATC’s Apprenticeship Director and wants youth to view manufacturing as a pathway to a viable



future just as they do college. Some young employees enter manufacturing, and then lament that they should have gone to college. The middle path that often gets overlooked is getting both: a two-year college degree by way of apprenticeship. “Employers have to become creative and look within their own doors to find individuals that are worthy of investment in upskilling,” Polk said. “Then they won’t have the frustration that a lot of employers are having now, with trying to find someone that already has those skills, because then that person is already employed, and being paid handsomely. Investment and then backfilling in my opinion, is a better strategy. You can easily go find someone to sweep floors, but you can’t easily find someone to run the CNC machine. So why not get the dedicated employee that has been sweeping floors for the past five years, that’s always on time. Upskill that person and then backfill that person’s position, because I can get anyone to sweep floors.”

The story Polk wants youth to know about him is that of a diligent person who made goals and patiently worked towards them. “I always tell youth that moving forward in your career is like eating an elephant. It can only be done one bite at a time. I don’t want young people to duplicate me, I want them to be better than me, learn from my mistakes, and from my journey.”

# Joe Nicosia

## Manufacturing Coordinator

WRTP|BIG STEP

For more than 24 years, Joe Nicosia has used his particular insight into the manufacturing industry to help WRTP|BIG STEP trainees find family-sustaining careers. His insight comes from a previous career as a union negotiator for 25 years. When Nicosia speaks to industry partners, he sometimes surprises them with his knowledge, both of the industry and their companies.

“My time in the union taught me to talk in a company’s lingo,” he said. “It’s helped me to communicate with them, and understand the worker on the shop floor. I was one of those workers, so I do understand.” He credits the success in his current position as Manufacturing Coordinator at WRTP|BIG STEP to his previous employer.

Just like in his union days, he does extensive research on companies before they partner with WRTP|BIG STEP. He asks companies questions they are willing to answer, and susses out what they might not want to answer by speaking with current and former employees. If it sounds like detective work, it’s because it is. He does it for the sake of the company and the trainees WRTP|BIG STEP is considering sending their way.

“I assess a lot of companies myself. I do some research to find out if they’re a stable employer within this community, and what their hiring practices are like,” he explained. “I have a pretty good idea when I walk in the front door to talk to them, what they’re going to say. But I always find some new information.”

Nicosia works with other WRTP|BIG STEP staff to conduct a needs assessment on each industry partner and union representatives every couple of years. He asks

companies about productivity levels, customer loyalty, labor relations, implementation of new technologies, gender disparities,

and vendors. From this information, Nicosia and WRTP|BIG STEP staff help companies establish upskilling programs for their employees. He once suggested to an employer who bought millions of dollars worth of equipment from a vendor to get that same vendor to provide a training program for its workers. Some employers do not even consider ideas like this, but Nicosia’s awareness of their situations helps him determine their needs.

He knows that it is challenging for companies to find the resources to provide training, but he often finds that they work to locate resources when they see what the alternative will cost in not upgrading workers’ skills. For companies that come to that realization themselves, it does not take long for them to look to Nicosia for help, even if it means training employees around their production schedules.

Overall, his focus is on getting companies to do what is best for their employees, which in turn will be what is best for them. This is the thinking that helped him during his years negotiating on behalf of workers. Whereas 50 years ago unions focused on negotiating hire wages, job security, pensions, working conditions, today’s unions



ensure workers have a stable future by focusing on more than wages. This is done by convincing a company to invest in machinery and facilities to grow their business in the long-term and secure a future for their employees. This is why Nicosia believes that labor unions should continue to do more than negotiate contracts by making training part of their demands.

“Unions should play a role by encouraging apprenticeships at companies and other types of training within the facility,” he said. “The age-old thing for years was if a company got into a downturn, the first thing they would cut is the training. But downturns are the perfect time to train.”

# 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.

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# 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](#)

