

INCLUSIVE INNOVATION IN ADVANCED MANUFACTURING: LESSONS LEARNED

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INTRODUCTION

New technologies, and historic federal investments, are positioning U.S. manufacturing for a resurgence. These investments in technology and innovation stand to benefit companies *and* workers – but only if institutional actors, including workforce development and business support programs, approach this opportunity intentionally.

Through case studies in Baton Rouge, Louisiana, Buffalo, New York, and Orlando, Florida, we explore how workforce intermediaries, education partners, business assistance programs, and community organizations pursue inclusion and innovation jointly through a mix of worker and firm-centered supports. Together, these cases reveal lessons for how place-based institutions can come together to support reinforcing cycles of inclusive innovation through complementary investments in workplaces, the workforce, and technology.

Below are the top five lessons learned from our case study research:

LESSONS LEARNED



1. Make manufacturing relatable

It's well-documented that manufacturing's perception problem is fueling a potentially dire and long-lasting workforce shortage in the United States. Underpinned by a lack of interaction between community and industry, manufacturing businesses are seeking ways to fill quality jobs in rewarding career pathways with new workers. Helping these prospective workers better understand what manufacturing looks like today, to imagine themselves in these careers, and to see people who look like them on the factory floor takes time and effort, but is critical to long-term recruitment and retention efforts. Partners in [Orlando, FL](#), are forging relationships with public high schools in the region to shift the narrative of manufacturing jobs

to match current reality: well-paying, accessible, safe, and exciting. Vocational training programs take things from there, using a mix of guest speakers, site visits, and short-term paid work experiences to help students learn cutting edge technologies and differentiate between roles and opportunities to secure the best employment fit. In [Baton Rouge, LA](#), the Skills for Life program brings in retirees of color to mentor a younger generation of manufacturing workers. These intentional efforts are critical to unwind the braided challenges of perception, recruitment, and retention of workers – ultimately by tackling the mutually reinforcing gaps of widening income inequality, workforce shortages, and technological change.

LESSONS LEARNED



2. Enhance job quality for all

Coordinated services can make manufacturing careers more accessible and inclusive by offering workers a range of supports, from hard skills training and career coaching to child care and other services that stabilize employment by mitigating hardship. But workers are not the only ones in need of wraparound support – many employers also require high-touch assistance to enact job quality improvements through enhanced internal career pathways and more inclusive in-house mentoring systems. This focused support can also ensure businesses move past entrenched organizational routines and practices, especially those that perpetuate structural inequities. In [Baton Rouge, LA](#), transparency in job openings and coordination of training requirements across a network of

employers and subcontractors creates upward mobility opportunities for workers while also encouraging companies to improve job quality to avoid losing talent. In [Buffalo, NY](#), manufacturing companies enlist training organizations and technology institutions to facilitate job quality improvement alongside new technology adoption, freeing up workers to focus on more rewarding and higher paying responsibilities. These workplace-improving interventions also boost overall business performance and innovative capacity, thus creating a ‘high-road’ environment that gives all workers a stronger sense of purpose and belonging at work.

LESSONS LEARNED



3. Partner to realize a broader vision

Recognizing what your organization isn't well-positioned to do and partnering to fill those gaps can yield more inclusive workforce outcomes - and realize a broader vision - than trying to do everything yourself. Institutional partnering is especially critical given the complex and layered challenges facing legacy manufacturing communities, be that improving racial equity, creating sustainable economic development, enhancing job quality alongside firm success, or evolving industrial capacity through new technological innovation. Partnered organizations bring together distinct forms of expertise for addressing specific challenges, while also working together in support of a diverse set of stakeholders. Collaboration encourages solutions that amplify impact and mobilize resources beyond what any one organization can bring to the table. In [Buffalo, NY](#), education institutions work alongside technological

consultants and manufacturing companies to design rewarding student work experiences that also allow students to showcase their mastery of the latest technologies to prospective employers. In [Baton Rouge, LA](#), community organizations mobilize training providers to coordinate onsite skill development and others to provide housing assistance and childcare support. In [Orlando, FL](#), economic development agencies connect workforce providers and companies interested in locating in the region, using those initial exchanges to closely integrate innovation and workforce services. By aligning to fill resource and expertise gaps and reinforcing each others' strengths, these partnerships foster a stronger sense of mutual responsibility and advance a collective vision for a vibrant local manufacturing economy.

LESSONS LEARNED



4. Leverage what you have

Repurposing and reorienting established institutional partnerships or programs can enable regions to respond more quickly to emergent or unanticipated challenges and opportunities. Even if those prior initiatives were created with seemingly different or narrower objectives in mind, they provide a tested and trusted relational base from which to launch new initiatives or reset priorities. With so many uncertainties on the horizon, be they health-related, technological, or climate-induced, the key is for communities to foster a responsive institutional infrastructure that is structured to identify and expeditiously support those communities and groups facing the greatest economic losses and risk. In [Buffalo, NY](#), new institutions are situated in an

existing manufacturing infrastructure, partnering with long established community groups pushing for reinvestment in a historically excluded and predominantly Black neighborhood. In [Orlando, FL](#), partners quickly shifted in response to the COVID-19 pandemic allowing them to scale up existing rapid skills training programs and refine them in support of displaced workers in the hospitality and tourism industry. By combining an economic development agency's new approach to identifying translatable skills with educational programming and manufacturer input, workers were able to quickly find new and better positions after being laid off.

LESSONS LEARNED



5. Build community trust

Since the 2020 racial justice uprisings, companies have committed to improving their Diversity, Equity, Inclusion, and Belonging (DEIB) efforts. But recruiting and retaining a diverse manufacturing workforce is not as simple as putting a few staff trainings in place. To be successful, companies must think about who they're looking to work with, identify past and ongoing harm, and dedicate resources to repair and establish trust at all levels of the company – from workers to supervisors to the C-Suite. Historical community context, personal trauma, long-held racial and gender biases, and other factors can all contribute to levels of mistrust that influence workers considering a career in manufacturing. Building - or in many cases rebuilding - trust takes partnership and continuous, intentional action. In [Baton Rouge,](#)

[LA,](#) the NBRITI program works with groups embedded in and trusted by community to do just that. Over time, these groups familiarized community members with manufacturing careers, while gaining insights into the individualized supports needed for success in the workforce. In [Buffalo, NY,](#) community engagement not only creates more supportive and inclusive workplaces, it also improves access to essential resources, like banking services, affordable housing, and food. Developing this kind of community support network, which is as diverse as faith-based organizations, other local businesses, and existing social networks, helps manufacturing companies get closer to achieving their vision of a racially diverse workforce.

CONCLUSION

Communities experiencing the impacts of historic disinvestment, and especially those struggling because of the decline of traditional manufacturing, are often left out of employment structures that enable satisfying career pathways into the middle class. Despite currently unfilled openings, and predictions for a total of two million new jobs over the next decade, under-representation of Black, Hispanic, and Asian workers in senior manufacturing roles compounds racial wealth gaps. However, the right institutional interventions can break this exclusionary pattern, leading to fairer wages while forging career pathways that give workers of color the chance to meaningfully participate in a more innovative manufacturing future.

Now is the time to transition our manufacturing economies towards an inclusive innovation commitment by recognizing workforce development and technological innovation as two sides of the same coin. As our own research shows, that alignment is not always guaranteed, but it is doable with the right partnerships, interventions, and approach. The three manufacturing communities featured in our research have maintained a strong tradition of making things, yet hold a concurrent desire to more equitably share the gains of that material creativity and productivity. The mix of strategies seen in these case studies can help overcome the broad, complex, and interrelated challenges facing the manufacturing industry. We hope you can join them.



