

INCLUSIVE INNOVATION IN ADVANCED MANUFACTURING: CENTERING COMMUNITY FOR ECONOMIC MOBILITY

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INTRODUCTION

In manufacturing regions across the United States, innovation and technology promise new business growth and productivity gains, yet ongoing workforce challenges complicate this trajectory.¹ The sector struggles to fill jobs, and faces a potential shortfall of over two million unfilled positions by 2030.² Job quality and accessibility remain challenges for attracting and retaining new workers. Black, Latinx, Asian, and female workers lack representation in manufacturing, particularly in senior level and better paying roles.³ For regions that have experienced historic disinvestment from the loss of traditional manufacturing, this compounds widening disparities, especially for communities of color.

Some communities, however, are harnessing this moment as an opportunity to propel a more inclusive and equitable future. They are intentionally building networks of businesses, workforce intermediaries, and community organizations that jointly pursue strategies to support both innovation and inclusion – broadening access for workers of color in an industry that offers pathways to the middle class.

In Louisiana, the North Baton Rouge Industrial Training Initiative (NBRITI) is one model for coordinated institutional approaches that build continuums of career trajectories within

advanced manufacturing, to the benefit of both workers and firms. North Baton Rouge has long been a hub for national petrochemical and oil-refining activity; the third largest ExxonMobil refinery is located here, one of nearly 150 refineries in the area. North Baton Rouge residents, however, have historically not been included in this growth story; instead bearing the brunt of environmental pollution and economic disinvestment over time.⁴ NBRITI has been rewriting this narrative by acknowledging this challenging history and rebuilding trust. Its approach centers and bridges the North Baton Rouge community to the growing advanced manufacturing ecosystem, yielding more widespread access and benefit.

This case study provides a ten-year retrospective look at the approaches and impacts of NBRITI and its core partners. The report shares strategies that have led to more inclusive innovation in North Baton Rouge, where investments in technology and innovation are coupled with investments in a skilled, supported workforce - both connected to the benefits of a thriving yet necessarily shifting advanced manufacturing industry.

ABOUT NORTH BATON ROUGE INDUSTRIAL TRAINING INITIATIVE (NBRITI)

NBRITI is a training initiative of Baton Rouge Community College currently focused on connecting students to career pathways in the petrochemical and oil refining industries, with transition options to clean energy.⁵ The initiative has provided industry-recognized training, skills certifications, and job placement support for over 400 residents, connecting them to in-demand jobs that foster career mobility and advancement. To carry out this work, NBRITI has engaged employers, community organizations, faith-based organizations, industry mentors, program navigators, industry liaisons, and others that provide services to help participants overcome barriers to success.

The initiative started in 2012, when employers in North Baton Rouge reached out to community partners, such as local churches, to discuss their workforce shortage. Despite high unemployment and income inequality in the majority Black community, local employers struggled to find workers and counted few local residents on their payrolls. As a result, these employers, Baton Rouge Community College, and other core community and industry partners launched

NBRITI in 2013 to connect North Baton Rouge residents to well-compensated, high-skill employment options in the welding, millwright, pipefitting, and electrical fields. These programs are fast-tracked, enabling students to obtain required credentials and a position within 52 weeks, if they meet program benchmarks. NBRITI has prioritized an approach that enables North Baton Rouge residents to access immediate, no-cost training and hiring support.

NBRITI has had an outsized impact on the communities and businesses it has sought to serve. Over 80% of the program participants have earned an industry-recognized credential at no cost to themselves, and all credential earners have successfully secured a well-paid position. NBRITI's network has facilitated career mobility for graduates, enabling advancement into new positions, industries, or entrepreneurship.

CORE INSTITUTIONS

Over the decade since the initiative began, a constellation of partners have supported the initiative.



As the training partner for NBRITI, **Baton Rouge Community College** offers credit and non-credit programs in millwright, electrical, pipefitting, and welding trades. The college has provided the physical space, funding, leadership, and coordination for the initiative. Its student body is majority Black, Latinx, and female.



Over 40 industry partners have supported the establishment of NBRITI by contributing funding and input into program design. Major partners include ExxonMobil and a number of local industry subcontractors, including Geo Heat Exchanger, Jacobs/Worley Parsons, Stupp Corporation, TRIAD Electrical and Controls, and Turner Industries. While all firms are currently involved in petrochemicals and oil refining, some are also actively supporting the transition to renewable energy. These industry partners are beneficiaries of the initiative as well: they have directly hired the majority of program graduates.

A range of **community and faith-based organizations** have contributed to the initiative's development and success. These organizations have raised awareness about the opportunity to start a career in advanced manufacturing through NBRITI training programs. They also address barriers for residents to participate and succeed. For example, they offer assistance with relocation and housing, financial literacy, transportation, and childcare.



KEY IMPLEMENTATION STRATEGIES

Centering communities within inclusive innovation strategies

For NBRITI, charting a path towards a more inclusive future has meant repairing the collective and individual impacts of years of environmental pollution and disinvestment in the North Baton Rouge community. Many North Baton Rouge residents, particularly within the Black community, have faced difficult memories of injuries to family members on the job, challenging racial dynamics, and poorly-paid roles with no career advancement.

Through intentional outreach and engagement, NBRITI program coordinators, Baton Rouge Community College staff, and community-based organizations worked to rebuild trust and shift these perceptions as the initiative launched. “We wanted to be as inclusive as possible to address the challenging circumstances in communities that live with poverty, environmental injustice, and racial tension. We were very individualized in our approach, not the most efficient, but [the] most effective in supporting workers that have experienced trauma,” explained an NBRITI program lead.

Leaning on a network of faith-based and community partners, recruitment efforts spanned neighborhood events, local businesses, churches, and social networks to familiarize community members with manufacturing careers. Many attendees were looking for careers offering family-sustaining wages; but did not know roles as pipefitters, electricians, and other well-paying positions in the industry were accessible and attainable. Trust building through community outreach helped establish NBRITI as a pathway to these careers.

NBRITI programming is designed to deepen trust within the North Baton Rouge community by addressing barriers to program completion and job placement, such as support with housing, childcare, transportation, and financial literacy. Employers were actively engaged in program design and mentoring, yielding broader recognition of student backgrounds and work experiences. This recognition has led to meaningful shifts in hiring and workforce practices, such as mock interviews, job offers made prior to graduation, and more flexible work schedules.

Intentional program iteration

Structured collaboration and program redesign has enabled NBRITI to add new program dimensions and offerings over time, and laid foundational infrastructure that may continue to evolve. An NBRITI program lead describes the shift: “When NBRITI started, we were an initiative. Over time, we built the trust and connection needed to become a coalition.”

NBRITI’s leadership prioritizes transparency, continuous collaboration, and program refinement. Early on, industry and training partners began regularly meeting over breakfast to reflect on successes and challenges. These meetings became an important opportunity to brainstorm pathways to improvement. For example, NBRITI training expanded to include millwright certification, advanced welding skills, and instrumentation classes based on industry input.

Industry partners also improved their practices through these discussions. Based on feedback from students, employers began meeting with the student cohort to demonstrate a skill, host a tour, or discuss day-to-day requirements of the workplace. Baton Rouge Community College and NBRITI also coordinated the *Skills for Life* program, connecting retirees of color from ExxonMobil to mentor program participants. Through this program, students began envisioning themselves in the workforce,

and gained strategies to navigate workplace dynamics and expectations.

Over time, NBRITI added resources to deepen inclusion efforts and increase access to manufacturing careers. Through public and private funding sources, NBRITI has integrated new training technologies, including a Virtual Reality Lab for safety skills training and Augmented Reality for technical skills training, enabling a training experience that better simulates real-life workplace scenarios. A partnership with the East Baton Rouge Housing Authority has provided access to relocation and housing support, and private partners such as Cadence Bank have created financial literacy training programs for NBRITI trainees. An NBRITI Program Coordinator shared that “everyone was always trying to tweak programs and improve to make the program work better for students and partners.”



Creating ease and transparency in career mobility

NBRITI facilitates transitions into advanced manufacturing, but it also fosters longer-term career mobility and security through its network of employers, training providers, and community-based organizations. NBRITI built a network of employer partners in the supply chain early on so that graduates had meaningful leads on career advancement opportunities in multiple firms.

Historically, non-union millwright, electrical, pipefitting, and welding positions at maintenance subcontractors working within an ExxonMobil refinery were well-paying, secure, and had good schedules. However, these subcontracted jobs were not necessarily tied to industry career advancement, as was more typically the case for those employed directly by ExxonMobil. Yet for some workers new to the industry or with limited career networks, transitioning into a permanent job at ExxonMobil was not easily in reach.

NBRITI addressed this disconnect in several ways. First, as the quality of the training program became recognized, NBRITI and the ExxonMobil union created a program to directly hire NBRITI graduates rather than waiting for them to first prove themselves at a subcontractor. Second, NBRITI's position as a central connector across employers has helped students and graduates hear about – and know they are qualified for – more openings across the industry. In this regard, NBRITI program navigators have helped to create a career lattice that extends across multiple employers, also enabling students

to traverse that network by communicating out relevant skills from prior experiences; this includes making visible the transferable skills they learned earlier in non-manufacturing jobs and professions, including teaching, firefighting, hospitality or utility linework. And, NBRITI has reinforced skill transferability by continually layering on new training options and additional connections to other training providers.

Third and finally, NBRITI programming has promoted career advancement within the petrochemical and oil industry, but also supports career advancement beyond it. NBRITI students and graduates have had frequent exposure to career pathways in other industries, access to related skills training, and an active career network, resulting in an ecosystem that supports choice and career mobility. For example, NBRITI started providing an introduction to careers in renewable energy sectors, which hires workers with the overlapping skill sets in the petrochemical and oil sector. The program also created follow-on advanced training in computing skills, solar photovoltaics, and battery technology to further position students for career advancement through lateral sector transitions. Building from this, Baton Rouge Community College has also advised students interested in entrepreneurship, enabling several graduates to launch their own contracting businesses in support of traditional and renewable energy applications.

WHY THIS MATTERS FOR INCLUSIVE INNOVATION

The North Baton Rouge Industrial Training Initiative’s approach to sector-based industry partners utilizes several strategies that are at the heart of inclusive innovation. In an inclusive innovation cycle, a constellation of partners collaborate to improve and invest in technology, workplace advancement, and workforce development infrastructure, leading to more inclusive outcomes that support workers and firms.

NBRITI *centers* community residents in inclusive innovation, addressing a history of systemic disinvestment and rebuilding trust. Participants in NBRITI are connected to a transparent, interconnected career network; this *visioning*

process helps them see themselves in career mobility opportunities. Finally, over ten years, NBRITI has evolved into a coalition of industry, community partners, and higher education institutions that support worker and employer success by connecting – or *bridging* – resources and perspectives. Further, as the region transitions to decarbonization and clean energy, this initiative provides a bridge for connecting today’s career pathways to a more renewable energy future. These inclusive innovation strategies are laying the foundation for accountability, trust-building, and collaboration as the workforce ecosystem shifts to meet these emerging needs.





ENDNOTES

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