

The logo for Policy Bridge features the words "POLICY" and "BRIDGE" in a dark red, serif font. The text is contained within a white, rounded rectangular shape that has a subtle drop shadow, giving it a three-dimensional appearance. The shape is slightly wider than it is tall, with rounded corners.

POLICY BRIDGE

The Fusion of Inclusion

**Expanding Minorities' Technology-Sector Presence
Is Critical to Fueling Northeast Ohio's Competitive Drive**

EXECUTIVE SUMMARY

Much analysis and action have centered on reinvigorating Northeast Ohio's economy. Economic development organizations, policymakers, business leaders, colleges and universities, and philanthropists have recognized the urgent need for greater entrepreneurship, specifically in technology fields, and have been working to build the region's technology infrastructure. Through regional self-assessment and analysis of global markets, through consensus-building and strategic investments, these change agents have collaborated on an action plan for boosting Northeast Ohio's competitive advantage. They have identified emerging high-growth industries for support. They have seeded entrepreneurial success by improving access to capital, encouraging a risk-taking culture, expanding networking opportunities, identifying markets and addressing workforce challenges.

Yet, there is a growing threat to regional competitiveness: underperformance of African-American and Latino populations in the industries identified as emerging drivers of the regional economy.

This report is an attempt to quantify what is anecdotally observed: Few African-Americans and Latinos are participating – let alone creating new businesses and jobs for others – in Northeast Ohio's technology sectors. This report attempts to understand the reasons and consequences for this disparity and craft strategies for connecting more minorities to the innovation economy.

by Gregory L. Brown,
Randell McShepard
& Fran Stewart

PolicyBridge
850 Euclid Avenue
Suite 1100
Cleveland, OH 44114
www.policy-bridge.org
June 2012



PolicyBridge is responsible for this report but received funding, support and subject matter expertise from regional change agents NorTech, The America21 Project, JumpStart, BioEnterprise, MAGNET, TeamNEO and the Fund for Our Economic Future. Cleveland State University's Center for Economic Development provided the quantitative analysis. (CSU's complete analysis can be found in the supplement to this report, available at www.policy-bridge.org and <http://urban.csuohio.edu/economicdevelopment/publications/>) The America21 Project, a national voice for accelerating prosperity among African- and Latino-Americans through increased innovation capacity and economic competitiveness, has helped shape strategies for inclusive competitiveness within the region's existing cluster-based strategies for economic growth.

Significant disparities are evident in four critical areas of employment, entrepreneurship, engagement and education. Although minorities make up roughly 20 percent of the study region's total population:

- African-American and Latino workers combined account for less than 10 percent of workers in selected high-tech industries in Northeast Ohio. For the nation overall, they account for about 16 percent of such workers.
- African-Americans and Latinos combined own only about 2 percent of all businesses in technology-based growth industries throughout the region and state. They account for only about 4 percent of such businesses in the nation.
- African-American and Latino entrepreneurs report significant obstacles in accessing startup capital and business development support.
- African-Americans and Latinos in Northeast Ohio lag their non-minority counterparts in educational attainment overall and specifically in the fields of science, technology, engineering and mathematics. Of all minorities working in Northeast Ohio's high-tech industries, less than a third had a bachelor's degree or higher. That compares to more than half of all non-minorities working in the region's high-tech industries. In Northeast Ohio, 30.4 percent of degrees earned by Hispanic students and 32.8 percent of degrees earned by white students were in STEM fields in 2009, compared to only 23.5 percent of degrees earned by African-American students.

Addressing these wide disparities requires comprehensive, collaborative and *urgent* action. PolicyBridge recognizes that the challenges and the areas of need extend beyond the scope and services of the region's economic development organizations. However, the EDOs' demonstrated ability to work separately and collectively to advance a shared regional economic competitiveness agenda provides the scaffolding on which to build economic inclusion platforms. For example, the Fund for Our Economic Future's Dashboard of Economic Indicators is an annual assessment of how Northeast Ohio stacks up against other metropolitan areas throughout the United States on factors associated with high growth. Although the Dashboard includes measures of racial inclusion and income inequality, an annual scorecard that focuses specifically on minority inclusion in the region's industries identified as having high growth potential – and minority acquisition of the skills and core competencies needed for these industries – would elevate the importance of this threat to regional competitiveness and would help to “move the needle” on a frustratingly intractable issue.

In their efforts to support entrepreneurship in the region's emerging industry clusters, economic development organizations already are focusing attention on areas critical to business creation and growth. Efforts

PolicyBridge is a non-partisan public policy think tank founded in 2005 to monitor urban policy issues affecting the quality of life for minorities in Northeast Ohio and inform regional public policy debates by framing issues of relevance to the minority community. PolicyBridge would like to acknowledge the contribution of Elaine Sutton, Ph.D., and thank all of those who provided guidance for this report. For more information, visit PolicyBridge's website at www.policy-bridge.org.

to encourage and enhance the growth of new businesses in general should also encourage and enhance the growth of minority businesses. Yet, it is clear that minority entrepreneurs are largely disconnected from these services, have specific challenges of access and require targeted action to “plug them in” to the larger ecosystem of entrepreneurial activity. An Economic Inclusion Scorecard would help to track progress, recognize wins and respond to losses.

Generating the hits and runs necessary to achieve big wins despite persistent underperformance will require a team effort. As such, the individual EDOs should first show their commitment to the team through a signed letter of intent to support and embrace the overarching objectives of the scorecard, as well as embed inclusion as a goal throughout their organizations.

The EDOs collectively should set performance goals for the region that reflect a common game plan. They should identify a “coach” to drive this strategy, monitor progress, support activities and motivate change. And they must demonstrate an openness for recruiting and engaging an expanding roster of clutch and utility players from other businesses and organizations throughout the region. Developing a common game plan, expanding the regional depth chart of support and keeping score are three critical, ground-breaking steps toward infusing inclusion into Northeast Ohio’s innovation economy.

An Economic Inclusion Scorecard would be a visible, accountable sign of the region’s commitment to the social ideal and economic imperative that all groups have the ability to access and compete in the types of industries and ventures that are expected to drive Northeast Ohio’s future prosperity. But the commitment and collaboration necessary to transform a region must first come from within the EDOs themselves. Embedded throughout the organizations, from board members and chief executives to staff members and community funders, must be a recognition of the importance, urgency and advantages of inclusion. Goals for inclusion must be infused into regional competitiveness strategies and must be allocated adequate resources and import. The EDOs themselves, which have specific areas of focus and expertise, must set their own goals and priorities and devise their own metrics for evaluating progress and success. However, they should set goals that are within reach but aspirational and offer opportunity for significant short-term impact.

Although each EDO should develop its own plan for infusing inclusion into its day-to-day operations and overall strategies, each EDO must work within the common game plan that addresses the four identified deficiencies of entrepreneurship, engagement, employment and education. Not all regional EDOs focus on all four areas; however, they each can work to improve inclusion within their core activities and services.

Detailed on the next page are broad recommendations for improving minority performance and competitiveness in Northeast Ohio’s emerging cluster industries.

INFUSING INCLUSION GAME PLAN

Entrepreneurship

(growing minority presence in the region's emerging industry clusters)

- Measure progress annually in minority business development in the region's technology clusters.
- Establish performance metrics for key staff at economic development organizations that align minority entrepreneurship outcomes with compensation incentives.
- Facilitate partnerships among existing businesses and organizations.
- Expand and deepen mentoring programs for aspiring minority entrepreneurs.
- Promote a unified one-stop shop for funding, technical, legal and marketing services.

Engagement

(connecting minorities to technology opportunities in Northeast Ohio)

- Reach out to minority entrepreneurs and minorities working in or studying STEM fields to invite them to participate in networking activities that connect them to the region's identified emerging high-technology industry clusters.
- Establish performance metrics at economic development organizations that tie outreach to minority entrepreneurs to performance reviews and other compensation incentives.
- Develop intermediary capacity specifically to help African-Americans and Hispanics connect with Northeast Ohio's existing innovation ecosystem.
- Include minority business leaders among regional task forces and advisory boards to bring their views to the table.

Employment

(expanding the region's pool of minority workers with technical skills)

- Explore opportunities to help minorities with transferable skills move into higher-paying jobs in high-technology industries.
- Employ "good corporate citizen" peer pressure to encourage businesses throughout the region to reach out to young people – minority and non-minority – to expose them to careers and opportunities available in Northeast Ohio.
- Create a blended venture philanthropy and enterprise development model to focus on STEM education, mine regional talent and anticipate the workforce needs of cluster industries.
- Commit to measuring progress annually in minority employment in the region's technology clusters.

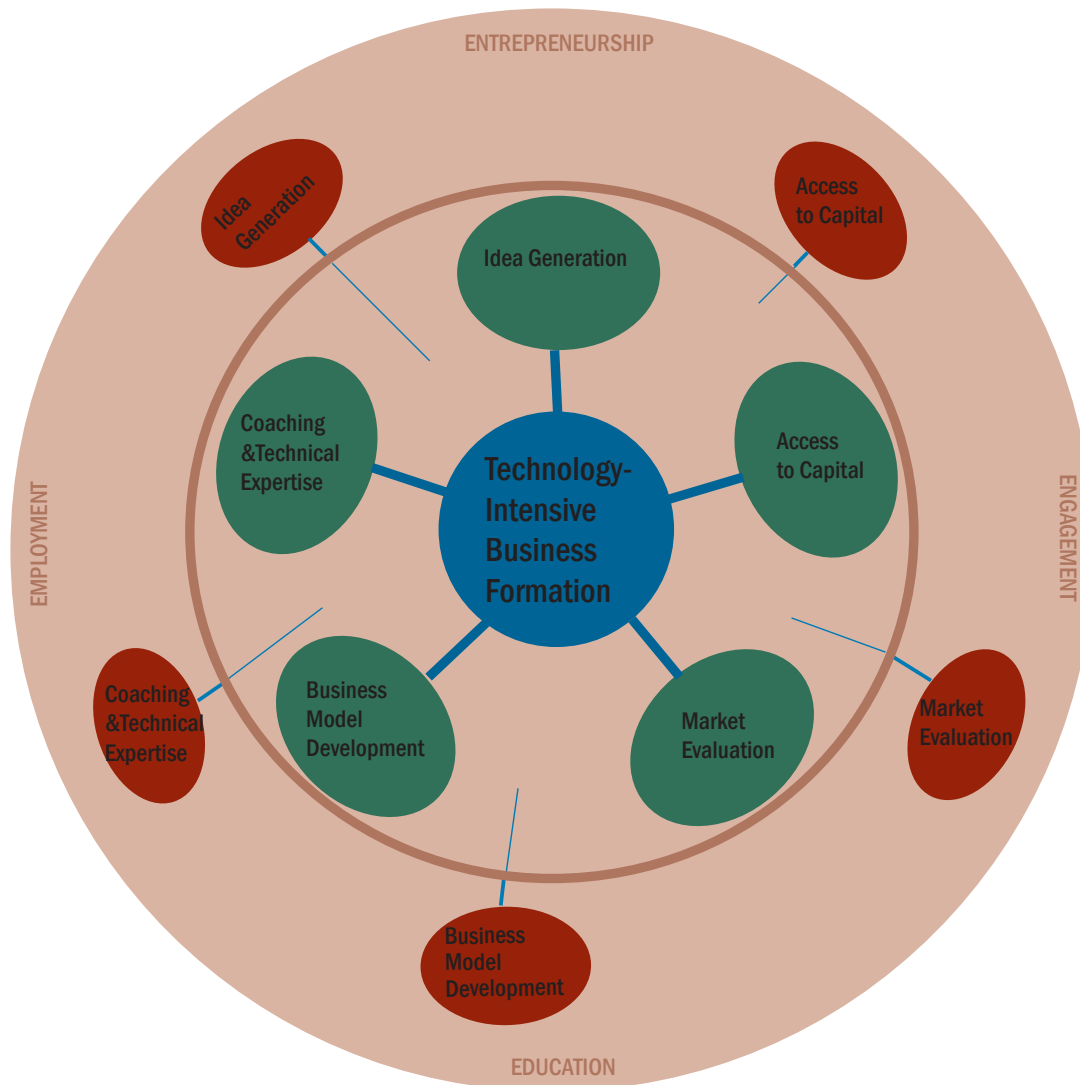
Education

(encouraging more minorities to pursue STEM or technical training)

- Measure progress in encouraging more African-American and Hispanic students to pursue STEM degrees and careers in STEM fields.
- Develop an informational campaign targeted toward minority students in high school and middle school to raise awareness of opportunities in STEM fields.
- Partner with area manufacturers to develop apprenticeship programs, short-term certifications and other hands-on training options to address shortages in in-demand technical skills.
- Reach out to school districts serving high minority populations to alert counselors and teachers to in-demand technical skills and career pathways.

The following figure illustrates the challenge for Northeast Ohio – and for regional EDOs in particular – in connecting minority entrepreneurs into the local innovation economy. Minority entrepreneurs and workers are part of the region’s innovation ecosystem, but they are in smaller numbers, are farther removed and remain largely disconnected from the web of activity and support that leads to successful technology-intensive business development. The reasons for this disconnection are many – personal choices, lack of knowledge, inequality of resources, historic barriers – but they are manifested through disparities in the elemental areas of education, employment, engagement and entrepreneurship. The pieces and parts that must come together for a successful venture are similar whether entrepreneurs are minority or not. What is missing for minority entrepreneurs is the connective tissue. Some local entrepreneurs have the core competencies and resources to navigate the process themselves. But many others have needed the support, knowledge and network of regional EDOs. The efforts of these support organizations have increased the pipelines for business development in Northeast Ohio’s identified cluster industries. These services are available and open to the region’s minority entrepreneurs, but, as the figure suggests, more work needs to be done to reach minority entrepreneurs where they are and connect them to the larger innovation ecosystem.

MINORITIES’ DISCONNECTION FROM NORTHEAST OHIO’S INNOVATION ECOSYSTEM



INTRODUCTION

New businesses equal new jobs. That’s the succinct, conclusive takeaway from a 2010 Kauffman Foundation report on the importance of start-up businesses to job growth. Job creation – and the economic growth that comes with it – rests squarely on entrepreneurs who are willing to take a risk on an idea with high-growth potential. Over the past three decades, young firms have created more than 40 million jobs, accounting for all the net new job growth for the nation.

Northeast Ohio needs more of those job-creating risk takers. Ohio needs more of those job-creating risk takers. Since the official end of the national recession in June 2009, the state has only created 86,200 jobs, a lackluster growth rate of 1.7 percent. Specifically, the region – and state – needs more entrepreneurs working to launch technology-intensive ventures. Intense technology users grew jobs at a rate of 5.1 percent from 2001 to 2009, a period that saw overall employment shrink by 0.5 percent. The superstars of job growth, according to a study out of Brandeis University, were small service firms with intensive information-technology use; such firms, while

“The learning curve is steep. ... Time is the most precious resource.”

Northeast Ohio African-American entrepreneur

accounting for only about 5 percent of total employment, created 34 percent of new jobs between 2002 and 2008. Add in the fact that technology jobs tend to pay higher than average wages, and their critical importance to economic growth and well-being is clear.

Yet, an entire group of people has been largely excluded from the economic benefits stemming from high-tech job growth and firm creation. African-American and Hispanic communities in Northeast Ohio are increasingly disconnected from today’s innovation economy. In a globally competitive marketplace that rewards knowledge acquisition, technology use and entrepreneurship, African-Americans and Hispanics find themselves cut off from opportunity and prosperity pathways. This is not a problem unique to Northeast Ohio. It is a national chasm centered along the fault lines of education, employment and entrepreneurship.

In Northeast Ohio, the opportunity chasm is likely to widen even further as the region moves to retool and reposition its economy with greater focus on and more targeted support for emerging industry clusters. Economic development organizations, government agencies, foundations, academic institutions and thought leaders are coalescing around a cluster-based strategy of allocating funds and resources to industries that represent the region’s comparative “best bets.” Building on the region’s existing industrial strengths and talent pools is a smart strategy, given limited amounts of dollars to invest and resources to allocate.

Yet, this prudent strategy risks exacerbating the region’s inequality of opportunities and outcomes unless similarly collaborative and urgent action is taken to better connect African-Americans and Hispanics to the core competencies – the wherewithal, knowledge, skills, capacity and execution – critical to succeeding in these emerging industries. Inclusiveness, in this environment, is less an argument of what is morally “right” or socially just; instead, it is an economic imperative. Northeast Ohio cannot afford to have 20 percent of its population largely shut out from job and industry growth. Such wholesale underperformance has economic impact beyond the individual level: It has region-wide consequences for employment, wealth creation and tax revenues.

A commitment to inclusion in no way should divert regional focus away from supporting the industry clusters that have emerged as Northeast Ohio’s economic best bets. Instead, strategies and tactics designed to improve

levels of racial and ethnic inclusion should complement and enhance existing action plans developed to help grow the regional economy. Encouraging a diversity of voices and perspectives within the emerging industry clusters is critical for developing new products, new services and new markets. Reinvigorating Northeast Ohio’s economy is not a zero-sum proposition, where one group benefits at the expense of others. All groups need to “up their game” to perform at higher levels of efficiency and creativity if the region is to grow its economic pie for the benefit of all.

MEASURES OF UNDERPERFORMANCE

The following figure clearly illustrates that not all groups will benefit equally from efforts to grow Northeast Ohio’s technology industries. Figure 1 examines African-American and Hispanic ownership as a percentage of all firms, regardless of minority or ethnic status, in technology-based growth industries. As the figure shows, absence of minority firms in technology fields is not a challenge unique to Northeast Ohio. Regardless of location, African-American and Hispanic ownership accounts for a very small percentage of firms in technology-based growth industries. African-American ownership accounted for only about 1 percent of all firms in technology-based growth industries in the region, state and nation in 2007. Hispanic-owned firms accounted for less than 1 percent of firms in technology-based growth industries in the region and state but 3 percent of such establishments in the nation. Those numbers are particularly shocking given the fact that African-Americans and Hispanics make up nearly 20 percent of the total population for the 12-county region examined for this report. In Cuyahoga County alone, African-Americans make up nearly 30 percent of the population and Hispanics account for almost 5 percent, according to 2010 Census data.

Table 1 points to the economic consequences of the scarcity of minority entrepreneurs in high-tech growth industries. Black-owned businesses tend to employ higher percentages of minority workers. A 2007 Gazelle Index

Figure 1. Employer Ownership by Race/Ethnicity of Technology-Based Growth Industries, 2007

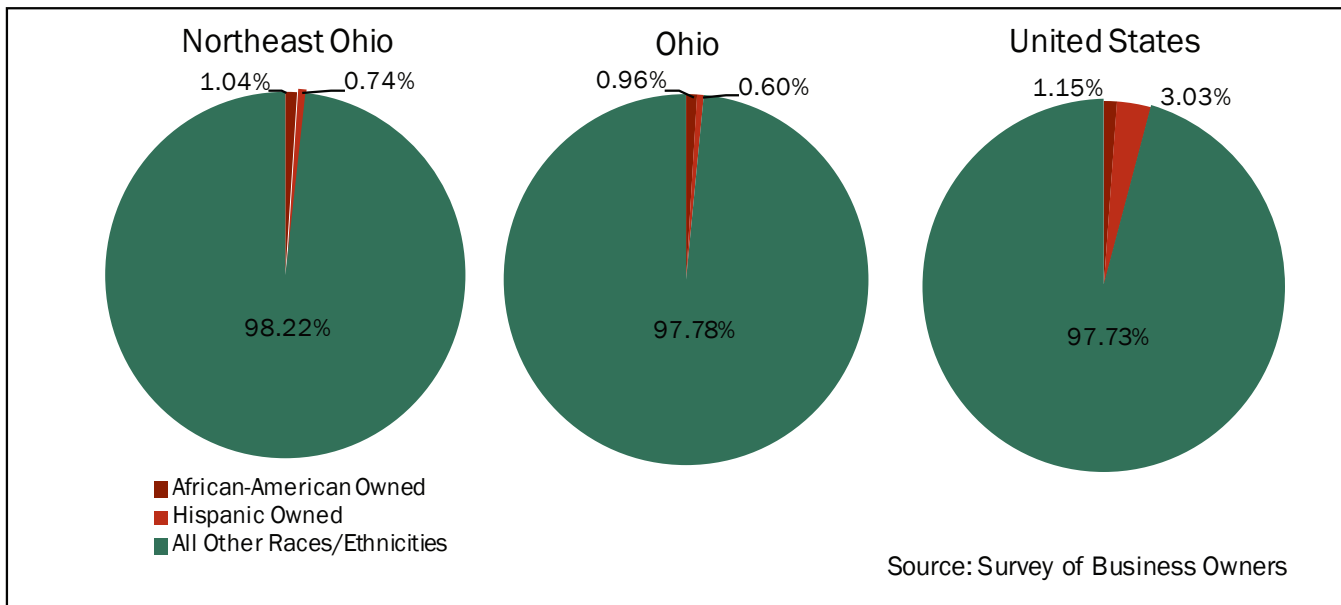




Table 1. Minority Employers in Northeast Ohio, 2007

Northeast Ohio Employers (11-County)								
Firms		Receipts (\$000)		Employment		Payroll (\$000)		
Count	Error ±	Count	Error ±	Count	Error ±	Count	Error ±	
High-Tech								
African-American Owned	27	14	\$30,159	\$9,168	186	65	\$11,978	2,875
Hispanic Owned	47	37	\$33,847	\$10,289	99	65	\$7,001	6,833
All Firms	3,258	313	\$6,004,819	\$1,056,848	33,181	3,716	\$1,733,692	194,174
All Industries								
African-American Owned	1,140	128	\$1,440,214	\$253,478	13,825	2,654	\$313,881	\$55,243
Hispanic Owned	472	53	\$889,635	\$113,873	4,240	407	\$148,705	\$21,414
All Firms	64,101	1,026	\$123,891,954	\$5,946,814	776,821	37,287	\$24,565,087	\$786,083

Source: U.S. Census Bureau, Survey of Business Owners

survey of black-owned businesses found that nearly two-thirds of workers at such firms were black. Minority-owned businesses also are more likely to be located in the urban core. Increasing the number of minority-owned firms in industries with high growth potential could help to counter high unemployment rates among black workers (which historically are double the jobless rates of whites), add revenues to cash-strapped communities and generate wealth among minority employers and workers alike. Table 1 provides information on sales and receipts, employment and payroll for minority-owned firms in Northeast Ohio. As can be seen, employment in minority-owned firms is a small sliver of overall employment in Northeast Ohio’s high-tech firms. Business sales and receipts for black- and Hispanic-owned businesses – at roughly \$30 million and \$34 million, respectively – are little more than 1 percent of receipts for all high-tech firms in the region.

According to a salary survey by the Dice recruiting network, the average wage for technology workers topped \$79,000 in 2010. A Bureau of Labor Statistics report on high-tech occupations demonstrated that average pay for technology workers was 40 percent to 60 percent higher than wages to workers in non-technology industries. Growing the number of minority-owned high-tech firms from 1 percent to a still-less-than-representative 10 percent of all high-tech firms in the region and growing the number of African-American and Hispanic high-technology workers to 10 percent of the regional workforce would have significant effect on growing individual and community assets.

Without urgent, comprehensive action, this threat to regional competitiveness appears likely to get worse. The Ohio K-12 STEM Education Report Card for 2011 predicted that, by the year 2018, the state will need to fill 274,000 jobs in science, technology, engineering and math fields. More than 140,000 of these jobs are expected to be in computers and math. Over the next decade, the U.S. demand for engineers and scientists is projected to increase at four times the rate of many other professions. Yet, too few young people, especially African-American and Hispanic students, are choosing to pursue STEM-related coursework at the college level. Despite increased focus on STEM, the report indicates a slight decrease in STEM interest among black *and white* students. This apparent mismatch between skill acquisition and projected demand may lead to a scarcity of qualified workers needed to fuel economic

growth for the region, state and nation. Equally troubling, as the number of technology-intensive firms grows, the demand for workers with lower skill levels tends to decrease. As a result, the inequality of wage and opportunity between highly skilled and lower skilled workers will likely widen.

A CALL FOR ACTION

PolicyBridge, a Northeast Ohio think tank focusing on policy issues affecting minority communities, and Cleveland State University's Center for Economic Development at the Levin College of Urban Affairs partnered in this effort to provide quantitative and qualitative analysis of minority inclusion in Northeast Ohio's technology clusters. PolicyBridge and CSU were commissioned to create this study by a group of Northeast Ohio economic development organizations led by NorTech, a technology-focused intermediary serving 21 counties in Northeast Ohio. NorTech also retained The America21 Project, the national initiative focused on Inclusive Competitiveness – connecting minorities to regional innovation ecosystems, clusters and emerging industry sectors – to provide subject matter expertise. Other organizations providing funding and support include JumpStart, MAGNET, BioEnterprise, Team NEO and the Fund for Our Economic Future.

This study's subject matter experts and funding organizations have made measurable gains in identifying opportunities for economic growth and helping to improve the region's overall competitiveness. A number of their achievements have garnered national recognition – deservedly so. In February 2011, President Obama praised NorTech for its innovative and collaborative efforts to “reinvent the rust belt as the tech belt.” President Obama also praised Northeast Ohio's JumpStart for its efforts at seeding innovation, tapping the organization for a nationwide initiative to spark job creation and economic growth by supporting entrepreneurs and small businesses. The five regional organizations engage in distinct yet complementary efforts to nurture an environment of innovation in Northeast Ohio, build on existing industrial strengths, and accelerate growth of emerging technology-based industries and companies. Each organization has a specific focus for its development activities. NorTech has developed into a national thought leader in the area of cluster mapping and growth. JumpStart provides technical assistance for entrepreneurs and early-stage investment capital. BioEnterprise works to grow health-care companies and commercialize bioscience technologies. The Manufacturing Advocacy and Growth Network (MAGNET) serves as an Edison Technology Center and operates the Manufacturing Extension Partnership program in northern Ohio. Team NEO works to align the region's business attraction efforts. These five non-profit intermediaries share the collective goal of creating 60,000 new jobs and attracting \$15 billion in capital investment. Moreover, America21 has advanced the Inclusive Competitiveness narrative nationally, conducting first-of-their-kind workshops, hosting summits – where real entrepreneurs have connected to real sources of capital – in several urban communities and leading advocacy efforts that have reached as far as the White House.

The Fund for Our Economic Future, which unites regional philanthropic organizations behind an agenda of improving economic competitiveness, has also embraced the need for better understanding minorities' current performance in science and technology fields, for assessing the impact of that performance on the region's overall competitiveness and for raising the level of inclusion in the region's emerging industries.

The various organizations have set goals and implemented strategies designed to increase the level of inclusion, both in technology industries and in their own organizations. A more complete listing of regional inclusion activities under way or in development can be found in the supplement to this report, but some of the efforts include:

- NorTech has set goals for raising the number of minorities serving on its board and making up its staff, as well as increasing its spending with minority firms. It is also striving to identify and recruit minority firms into the flexible electronics and advanced energy clusters in order for them to take advantage of

available regional and federal resources. For example, NorTech leads a federally-funded program, the Speed-To-Market Accelerator, that includes recruitment of minority-owned firms as a top priority in its overall mission of advancing regional innovation clusters. In addition, NorTech sponsors several STEM and entrepreneurship youth programs aimed at increasing the region's minority leadership pipeline.

- JumpStart has developed Launch 100 to identify and support minority businesses that have the potential readiness and growth capacity to reach \$15 million in sales within a 5-year period. Its First Client Pilot Initiative aims to connect minority entrepreneurs and businesses with established institutions and corporations. Its Best and Brightest Initiative focuses on bringing existing minority organizations and leaders into the technology ecosystem as advisers, mentors, angel investors and board members.
- BioEnterprise is working to attract biomedical businesses into urban core neighborhoods to advance business growth and employment. Through a minority business conference, it aims to expand the pipeline of African-American and Hispanic entrepreneurs through networking, information-sharing and educational activities.
- MAGNET is stepping up efforts to reach minority manufacturers and add minority representation to its organization and board. In collaboration with regional partners, it plans to present workshops on topics tailored to the needs of minority manufacturers, such as supply chain and talent development. In addition, MAGNET is working to heighten and expand the STEM focus of its workforce and talent development programs, many of which target core-city middle and secondary schools and career centers. Its ongoing outreach with the Cleveland Metropolitan School District and other regional core-city districts includes work with robotics programs and other tech-based, STEM-focused activities.
- America21 is leading the introduction of the Inclusive Competitiveness narrative throughout the United States. In collaboration with Rutgers University Business School, it created "A Gathering of Angels" in Newark, the first conference focused on minorities, high-growth entrepreneurship and angel investing. In partnership with BioEnterprise, America21 co-hosted the Minority Biomedical Entrepreneurship Conference in Cleveland, the first event designed to grow minority bioscience entrepreneurship. America21 also is helping communities develop inclusion strategies through workshops and summits in Detroit; Pittsburgh; San Francisco; Philadelphia; Montgomery, Alabama; Portland, Oregon; and Washington, DC.

These efforts are commendable and provide scaffolding to bridge the divide. What is missing, however, is the sense of urgency to stem a yawning chasm. The familiar historic inequalities that have resulted in structural and systemic obstacles to minority competitiveness may be contributing to a somewhat blasé view of African-American and Latino underperformance. Inclusion efforts are relatively tepid given the growing stakes. The rapidity of technological change has disproportionately punished those who lack the means and competencies to keep pace. The rift between those with the knowledge, know-how and network to access – let alone succeed in – the innovation economy and those who lack such core competencies is getting wider faster than the region is building its infrastructure of inclusion. This study demonstrates the need for more comprehensive, coordinated and *urgent* action to address four areas of critical deficiencies:

- Employment
- Entrepreneurship
- Engagement
- Education

For the purposes of this study, the five industry clusters representing Northeast Ohio’s comparative “best bets” for economic growth are:

- Advanced/alternative energy
- Advanced materials
- Bioscience
- Instruments, control and electronics (including flexible electronics)
- Power and propulsion

Clusters, as defined by the Brookings Institution, are “geographic concentrations of interconnected businesses, suppliers, service providers, and associated institutions in a particular sector.” Northeast Ohio’s identified clusters tend to build on existing regional strengths or stem from some unique value proposition of the region. The region’s comparative advantage in advanced energy, for example, extends from Northeast Ohio’s deep history and knowledge of energy production; its breadth of activity in areas such as manufacturing, engineering, research and development, sales and distribution, and education and training; its deep pool of necessary skills and talent; and its access to markets and capital. The region’s advanced energy cluster, as defined by NorTech, consists of sectors such as energy storage, wind energy, waste-to-energy, fuel cells, clean coal, energy efficiency and shale gas.

Efforts to align analysis for this report with specific cluster industries proved problematic. Data for examination of minority participation in technology-based growth industries were derived from establishments classified at the six-digit level by the North American Industry Classification System (NAICS). This represents the finest level of industry detail achievable in the NAICS database. The Center for Economic Development, in conjunction with NorTech and other Northeast Ohio economic development intermediaries, identified NAICS codes for the five industry clusters. However, due to disclosure limitations, reporting issues and measurement error of databases used for this project, data for these clusters were aggregated to a cluster-level designation of selected high-tech, selected non-high-tech, and all other industries. The selected high-tech industries were chosen from the Northeast Ohio High-Technology Economy Report, which was prepared for NorTech in 2011 to examine the region’s technology-based sectors; the selected non-high-tech industries were the remainder of cluster industries not identified as high-tech industries in that report. All other industries include NAICS industries not designated as high-tech or non-high-tech industries.

For the purposes of this study, Northeast Ohio is defined as a 12-county region consisting of Ashtabula, Carroll, Cuyahoga, Geauga, Lake, Lorain, Mahoning, Medina, Portage, Stark, Summit and Trumbull counties. These counties were selected because at least 5 percent of their residents are minorities. For a further explanation of methodology and a list of industries included in each category, please see CSU’s full report on “Minority Participation in Technology-Based Growth Industries.”

This report draws on CSU’s quantitative analyses of data on educational pursuits, employment and business ownership and incorporates qualitative input collected by PolicyBridge from minority entrepreneurs, business leaders, educators, activists and intermediaries through a series of focus groups and individual interviews. For the purposes of this study, “minority” refers to African-Americans and Hispanics only. This report reflects the views of PolicyBridge.

THE CHALLENGE FOR THE REGION

Why should the region as a whole be concerned if segments of the population are failing to access or being excluded from growth industries? The reasons are plenty, say African-American and Hispanic business and community leaders interviewed for this report:

- Stagnant community and economic growth
- Stifled business growth
- Increased human services challenges
- Higher unemployment and poverty
- Greater drain on community resources
- Continued population loss

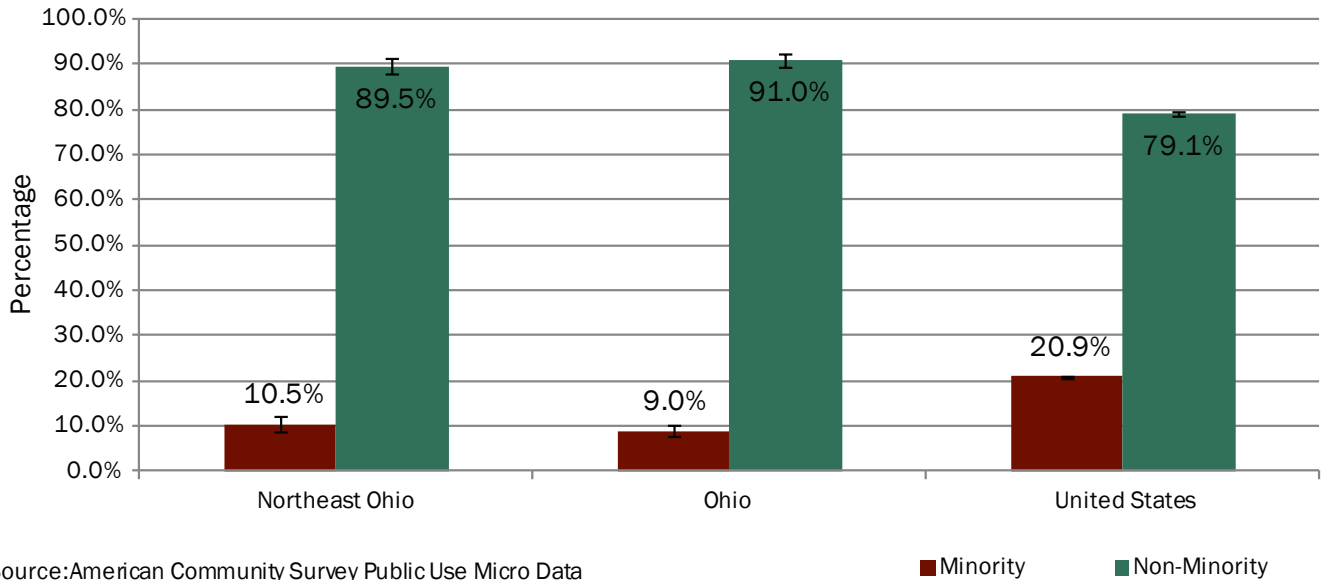
It's important to note the racial and ethnic backgrounds of focus group participants. Of the 50 participants representing the private, public and non-profit sectors in seven different focus groups, 52 percent were Latino, 40 percent were African-American and 8 percent were white. There was broad consensus among participants that underperformance by African-Americans and Hispanics in Northeast Ohio's emerging industries – and the innovation economy overall – dampens the region's efforts to restore vitality. And there is little doubt that too few black and Hispanic entrepreneurs, senior managers and skilled professionals are even competing, let alone winning, in an innovation economy that rewards knowledge acquisition, technology use and calculated risk-taking. The diverging paths of minorities and non-minorities in terms of employment, entrepreneurship, engagement and education are threats to the region's overall economic competitiveness.

EMPLOYMENT

Focus group participants described African-American and Latino participation in high-tech growth industries as low, and data on employment match that perception. According to 2010 employment estimates tallied by researchers at Cleveland State University's Center for Economic Development, black and Hispanic workers combined accounted for less than 10 percent of workers in selected high-tech industries in Northeast Ohio. Comparatively, black and Hispanic workers accounted for roughly 16 percent of workers in the study region's non-high-tech industries. These participation rates were significantly lower than for the nation overall. Figure 2 shows 2010 employment estimates for minority and non-minority workers for selected high-tech industries for the region, state and nation. A more detailed description of CSU's analysis is available in the supplement to this report.

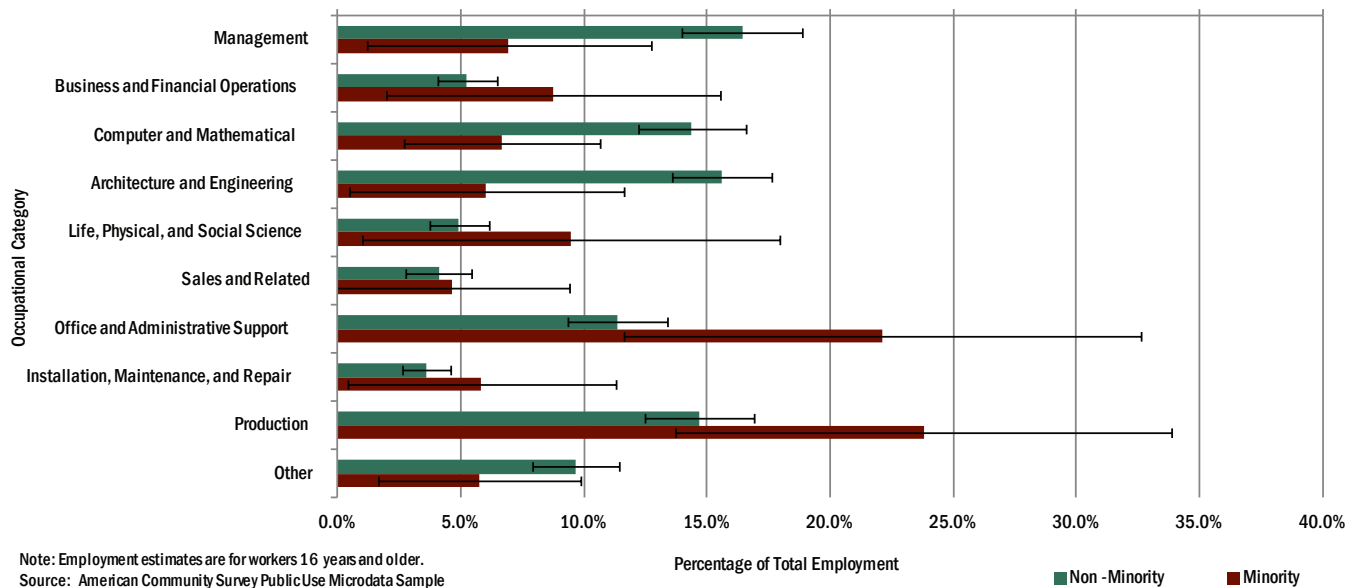
The CSU analysis found that not only was there an underrepresentation of minorities in Northeast Ohio's high-tech industries, compared to the region's population distribution, but there was also a significant difference in the kinds of jobs minorities do in those industries. African-Americans and Hispanics were significantly less likely to hold management positions in Northeast Ohio's high-tech industries than non-minorities. They also were less likely to work in computer, mathematics, architecture and engineering fields. In fact, only 22.2 percent of African-Americans and Hispanics working in Northeast Ohio's high-tech sectors in 2010 held science and math occupations. In comparison, 34.9 percent of non-minorities in the region's high-tech sectors were engaged in science and math jobs. Figure 3 shows the different participation rates by high-tech occupations. The rules indicate margin of error due to sample sizes. Occupations where there is no overlap of error estimates for minorities and non-minorities can be considered to have statistically significant differences. For an explanation of methodology, please refer to the entire CSU analysis in the supplement to this report (available at www.policy-bridge.org and <http://urban.csuohio.edu/economicdevelopment/publications/>).

Figure 2. Percentage of Employment Estimates by Minority and Non-Minority Workers for Selected High-Tech Industries, 2010



Source: American Community Survey Public Use Micro Data

Figure 3. Major Occupations in the High-Tech Sector in Northeast Ohio for Minority and Non-Minority Groups, 2010



Note: Employment estimates are for workers 16 years and older.
Source: American Community Survey Public Use Microdata Sample

The longtime owner of a metals fabricating company who recently founded an architectural and engineering firm said he tries to hire as many minorities as he can. The problem is he can't find enough with the skills he needs. He needs workers who are trained in computer-assisted design, who can understand 3-D modeling and who can engage with scientists and researchers to bring concepts forward. "We don't have enough. The talent pool isn't here. In other areas, colleges see the need to produce more [in-demand skills]."

ENTREPRENEURSHIP

Given minorities' relatively low level of participation in Northeast Ohio's high-tech industries and their significantly lower representation in management, science and engineering fields, it should come as little surprise that few high-tech industries in the region are owned by African-Americans and Hispanics. Only about 1 percent of Northeast Ohio's high-tech firms are owned by African-Americans, a rate similar to those owned by African-Americans throughout the state and nation. Hispanic ownership also accounts for about 1 percent of high-tech businesses in the region and state; throughout the nation, Hispanic employers account for 3 percent of all businesses in high-tech industries.

“One of the biggest barriers to entry is the first \$100,000. ... I had to sell the house, the car, even my wife's wedding ring to get started.”

Northeast Ohio minority entrepreneur

When comparing Northeast Ohio to the state of Ohio and the United States, it is important to take into consideration the minority share of the population age 18 and older that resides within each geographic area. In short, if a locality does not have a large minority population, then it cannot have a high participation rate in business ownership. In order to evaluate this comparison, the employer ownership share of shares calculates minority employer ownership rates in relation to the size of the minority population in a geographic region. If this measure equals 1, the minority employer ownership rate equals the relative size of the minority population in that geography. Among high-tech employers in Northeast Ohio, African-Americans' share of shares is 0.06 (± 0.03 , with a range from 0.03 to 0.09), indicating a very low number of black-owned high-tech businesses in proportion to the share of African-Americans in the Northeast Ohio population overall. For Hispanics in Northeast Ohio, the share of shares was 0.56 (± 0.44 , with a range from 0.12 to 1.00).

Disproportionately low minority ownership of high-tech companies is not unique to Northeast Ohio. The share of shares for high-tech black employers is 0.10 (± 0.04) in the state and 0.13 in the nation. High-tech Hispanic employers are somewhat better-represented, with a share of shares of 0.50 (± 0.27) for the state and 0.24 for the nation.

African-Americans and Hispanics face hurdles to high-technology entrepreneurship that are either less formidable or non-existent for their white counterparts. Focus group participants cited a number of hurdles that have hindered minorities' entrepreneurial activity in Northeast Ohio's growing technologies:

- Lack of funding
- Lack of entrepreneurial role models and technology industry networks
- Lack of entrepreneurial capacity and business knowledge
- Lack of entrepreneurial training programs

Participants in two focus groups of African-American and Latino business owners, executives and budding entrepreneurs provided personal experiences and observations related to the challenges they face.

“One of the biggest barriers to entry is the first \$100,000,” said a focus group participant who describes himself as a “serial entrepreneur.” “That's when you're getting patents and getting your business set up.” As an entrepreneur, “I had to sell the house, the car, even my wife's wedding ring to get started.” From his own difficult – but rewarding – experience, he developed a number of ideas about how to address the particular challenges faced by entrepreneurial minorities, especially those who want to start businesses in the technology sector.

African-American and Hispanic entrepreneurs tend to have fewer personal assets to be able to sustain the time of no salary. He said they tend to lack access to what venture capitalists call the “3 F's”: family, friends and fools.

His observation is consistent with research indicating that African-American entrepreneurs are far less likely to access external debt and equity and much more likely to rely on personal resources than their white counterparts.

Because there are so few African-American and Hispanic entrepreneurs operating in the technology sector, those who might have two critical components for a successful venture – a great idea and a willingness to work hard – lack an important third factor – entrepreneurial knowledge. “The learning curve is steep,” he said. “VC investors are not there to hold your hand.” Lack of knowledge makes entrepreneurs, especially minorities, vulnerable to being overloaded by available but sometimes conflicting information on the Internet and easy prey for predatory businesses that overcharge for web page development, legal services and other important but non-central activities. This depletes limited resources and eats up time better spent on developing the core business. “Time is the most precious resource.”

“What’s needed is a remedial entrepreneurial boot camp for African-Americans and Hispanics,” he said, consisting of basic information about business structure, standard legal forms and help accessing capital. So convinced is he of a void in supporting minority entrepreneurs, he’s considering developing his own internships, perhaps selecting 10 budding business owners and providing \$25,000 in seed money.

A husband-wife team pursuing a health-care venture while they each hold down day jobs to make ends meet said they exemplified minority entrepreneurs who lack critical knowledge: “We’re both college-educated, but there was so much of this we were missing,” the wife said. “We don’t come from an entrepreneurial background. We bumped our heads a lot. We spent more money than we should have. When it comes to that first round of money, people won’t believe in you, invest in you to move forward.”

She believes much of the first round of money they spent was wasted – on a fruitless patent, on ineffective trademarking, on incorrect incorporation, on a marketing plan that missed the mark. “We wasted so much money on stuff we thought we needed.”

“In college, I had no knowledge about entrepreneurship and business,” she said. “We were busy putting ourselves through school.” She recommended that high schools incorporate business development skills into the curriculum, especially for minority students who may not have any connection to people who own businesses and employ workers. “It needs to start at the point of entry into high school.”

“We don’t come from an entrepreneurial background. ... [P]eople won’t believe in you, invest in you to move forward.”

Northeast Ohio African-American entrepreneur

ENGAGEMENT

Plenty of entrepreneurs have succeeded in figuring out the process of business development for themselves, but mastering the learning curve costs time and money. “The process is very intimidating and rigorous,” said another business owner. Helping minority entrepreneurs anticipate and navigate around barriers, many of which may have little to do with the quality of the business idea itself, would be a step toward accelerating minority business growth. Entrepreneurial-minded African-Americans and Hispanics often lack an adviser to help them work through the process of how to calculate risks.

However, focus group participants warned that disjointed advice can be worse than no advice: “How many seminars and different groups tell you to go in different directions only to get told you just passed their funding stage.” Frustration due to lack of coordination can kill entrepreneurial spark, especially among those with limited resources and little support among family and friends for risk-taking ventures. Such an environment, in addition



to making it more difficult to launch a business and weather inevitable challenges, means that, for many business-minded minorities, they get one shot at entrepreneurship. “If this fails, your ability to recover from it in a timely manner and try again is unlikely given how leveraged you are. You don’t have the resources to do it again.”

Even relatively small amounts can seem like insurmountable hurdles. One budding entrepreneur operating on a lean budget told of lacking the funds to cover a \$500 registration fee for a conference of business owners operating in similar space. “One of the barriers to entry is the cost to even go to these conferences to be able to meet individuals to partner with and bring back resources to the area.”

The process of lining up investors, vendors and customers can feel like a frustrating “catch-22”: Do you put limited funds toward a prototype of the product or spend the money to market a product you don’t have? “Nobody wants to fund marketing. To me, that’s how you reach your market. But if you mention marketing, it’s like throwing a stink bomb in the room.”

Focus group participants decried what they perceive among support organizations and programs as a lack of understanding and accommodations for the particular funding and information challenges minority entrepreneurs face. “It’s pure access,” said one business owner. “JumpStart took a wild chance with us. We couldn’t find investors in Northeast Ohio. No one wanted to take a chance on us. It took us almost two and a half rounds before [funders] stepped up to the table without putting handles on us.” Focus group members described potential funders as “skittish” around African-American and Hispanic entrepreneurs operating in emerging industries. “You can have the greatest idea, but you won’t get there unless somebody is your champion.”

“In the Hispanic community, we even have a more difficult time because we’re a smaller community,” said another business owner. “We don’t have a champion opening doors.”

Yet, focus group participants also voiced frustration over fractious elements within their own communities that stand in the way of the kind of collaboration necessary for successful ventures. “Some Hispanic entrepreneurs out there won’t align themselves with any group for fear of being taken down with the ship. It’s a very grave situation in the Hispanic community due to leadership not speaking for the whole.”

There has been a reluctance to share, said another focus group member, with too many minorities who own and operate established business enterprises fearful that helping others may be a threat to their own bottom line. However, some see hopeful signs of progress: “I’m starting to think that’s a generation thing. We’re starting to understand that we have to help each other.”

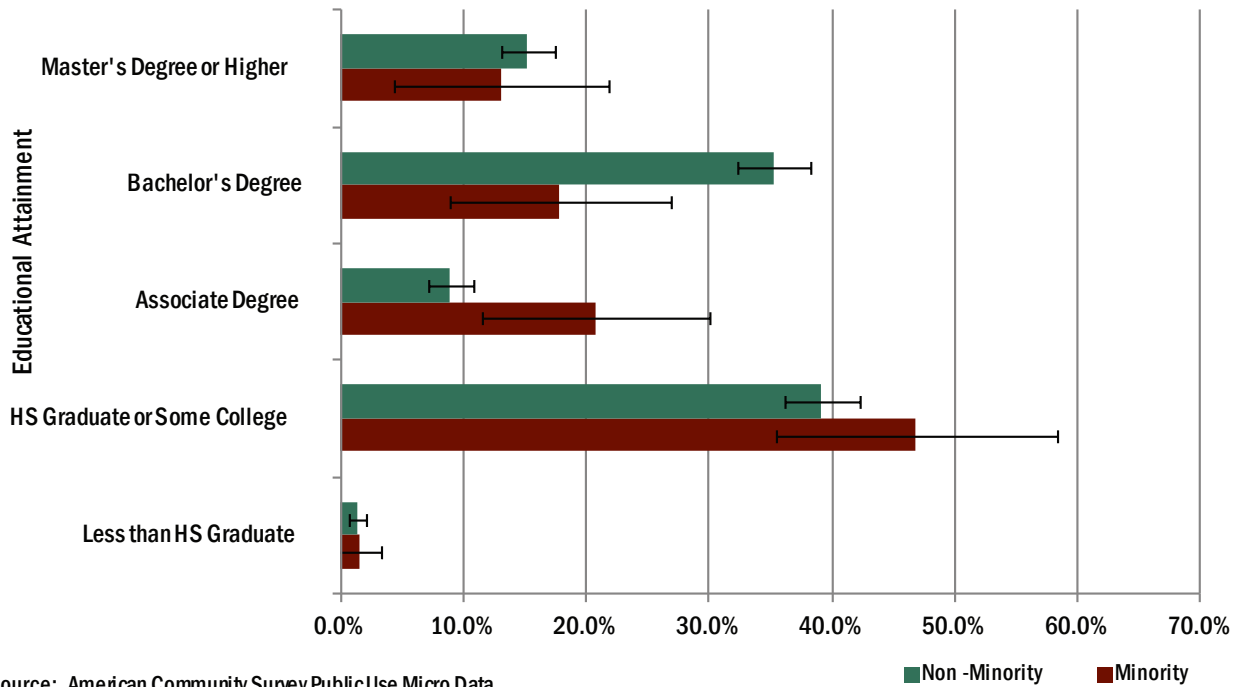
EDUCATION

Beyond hurdles specific to entrepreneurial activity and business development, focus group participants cited a number of obstacles that point to future challenges in attracting well-trained and high-potential African-American and Hispanic prospects to high-growth, high-technology fields. Long-range hurdles loom due to:

- Families and communities often don’t have the awareness or skills to support students who want to pursue technology fields or dream of being entrepreneurs.
- Student exposure to and mastery of science, technology, engineering and mathematics is insufficient relative to the identified need.
- Local education systems, especially those serving disadvantaged populations, are failing to prepare students to succeed in an increasingly high-tech, knowledge-focused work environment.
- Community cultures and value systems have placed too little emphasis on academic excellence and entrepreneurship.

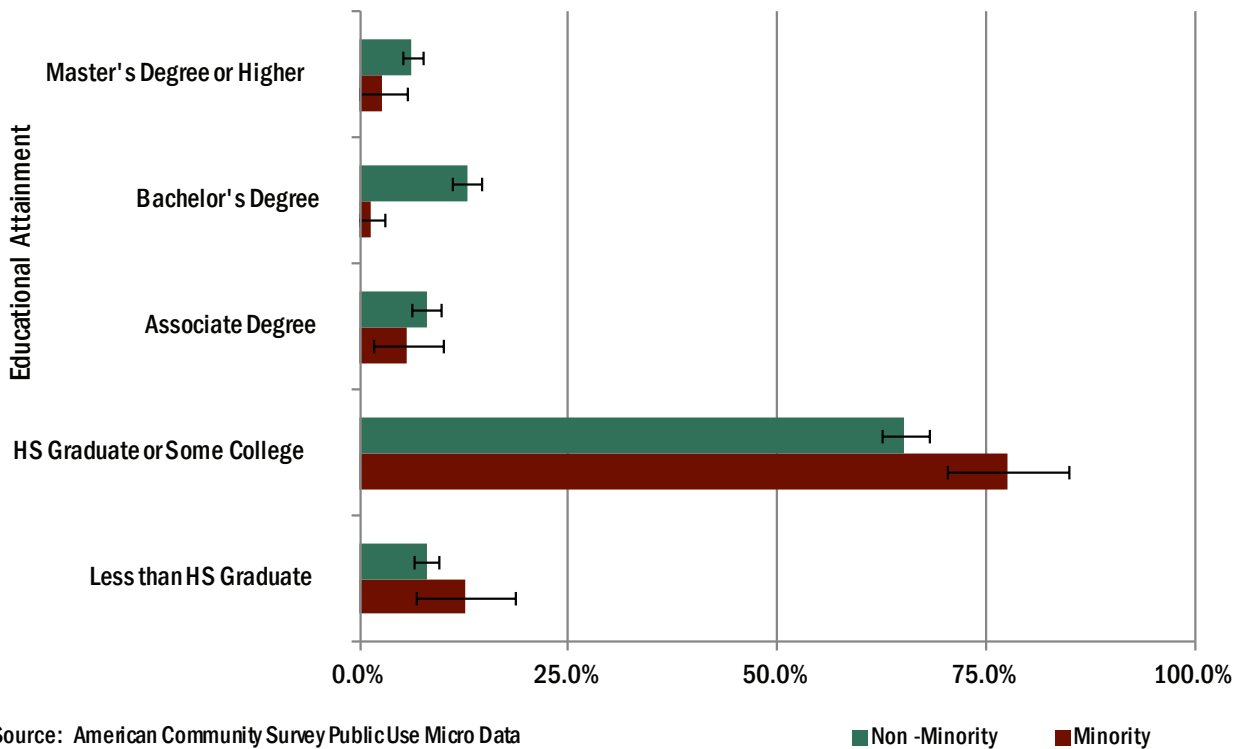
The CSU analysis found significant differences in educational pursuits and attainment levels between minorities and non-minorities. As shown in Figures 4 and 5, African-Americans and Hispanics working in Northeast Ohio’s

Figure 4. Educational Attainment by Minority Status in the High-Tech Industries, 2010



Source: American Community Survey Public Use Micro Data

Figure 5. Educational Attainment by Minority Status in Non-High-Tech Industries, 2010



Source: American Community Survey Public Use Micro Data

high-tech and non-high-tech industries were much less likely to hold bachelor's degrees than their non-minority co-workers. Of all minorities working in Northeast Ohio's high-tech industries, less than a third had a bachelor's degree or higher. That compares to more than half of all non-minorities working in the region's high-tech industries. It should be noted that the college attainment difference is at the bachelor's level. There is no significant difference between high-tech minority and white workers when it comes to master's degrees and above. Minorities working in high-tech industries were much more likely than their white counterparts to have an associate's degree.

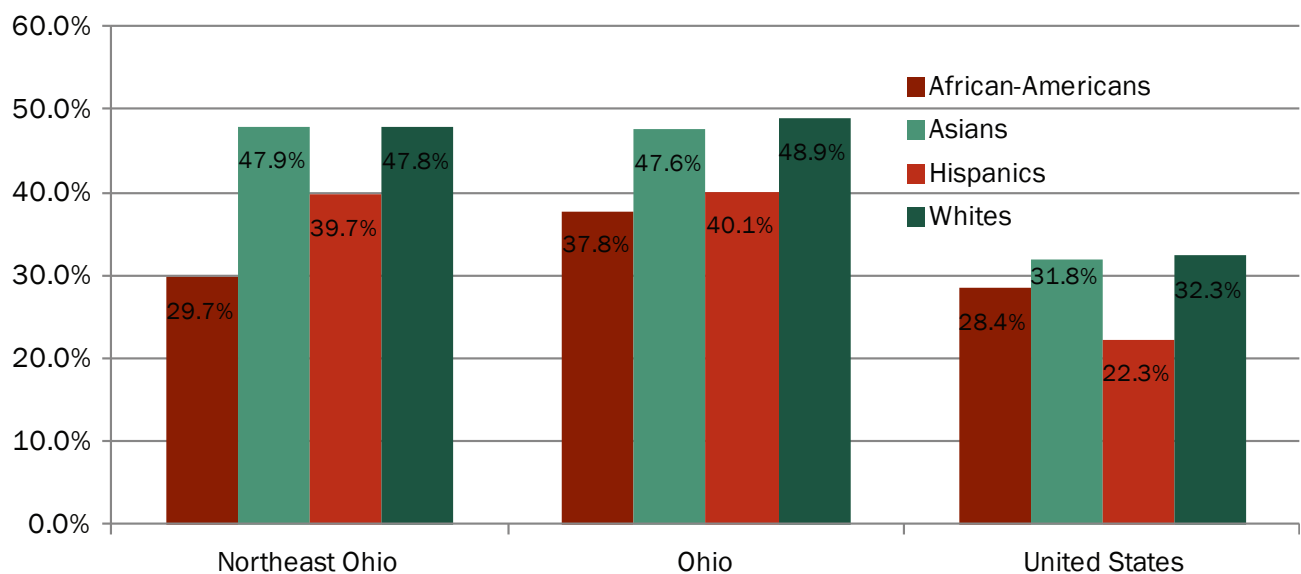
Although the college attainment level for minorities in high-tech industries significantly lags their white counterparts, it is substantially higher than for minorities working in Northeast Ohio's non-high-tech industries. Less than 5 percent of minorities working in those industries had earned a bachelor's degree or higher. Hispanics and African-Americans working in Northeast Ohio's non-high-tech industries were significantly more likely than their white co-workers to have only a high school education.

Not only are minorities lagging in educational attainment, which affects employment prospects in an economy that increasingly demands some sort of training beyond high school. But even the choices among African-Americans and Hispanics pursuing postsecondary education put them at a disadvantage in a marketplace that prizes technical skills. At all levels, fewer African-American students pursue degrees in science, technology, engineering and math than students from other racial and ethnic backgrounds. In Northeast Ohio, 30.4 percent of degrees earned by Hispanic students and 32.8 percent of degrees earned by white students were in STEM fields in 2009, compared to only 23.5 percent of degrees earned by African-American students. It should be noted that more than half of all Asian students who earned college degrees earned them in STEM fields, a rate of technological pursuits surpassing all other racial and ethnic groups.

The percentage of African-American students earning STEM degrees in Northeast Ohio (23.5%) was slightly lower than the rate for the state overall (24.5%) but slightly higher than for the nation (23.0%). The percentage of Hispanic students earning STEM degrees in Northeast Ohio (30.4%) was higher than the rate for both the state (25.3%) and nation (21.4%).

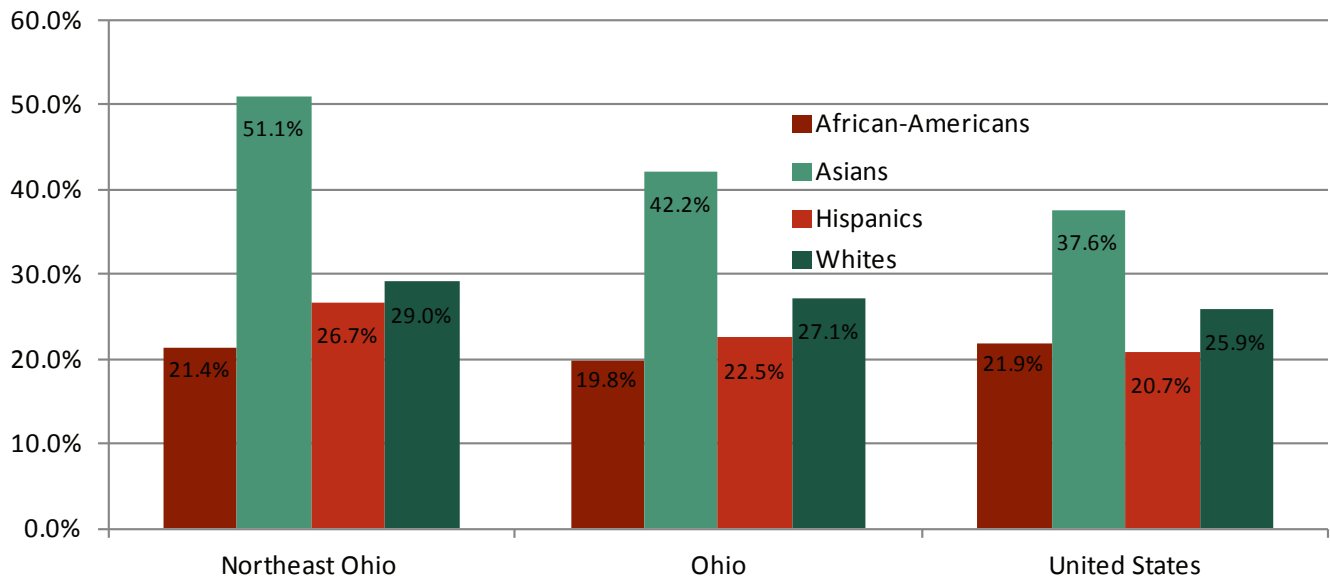
Figures 6-9 examine STEM participation rates by degree for each racial/ethnic group. For more information by degree type, please see the full CSU analysis in the supplement to this report.

Figure 6. STEM Percentage of Total Associate's Degrees Awarded By Racial/Ethnic Group, 2009



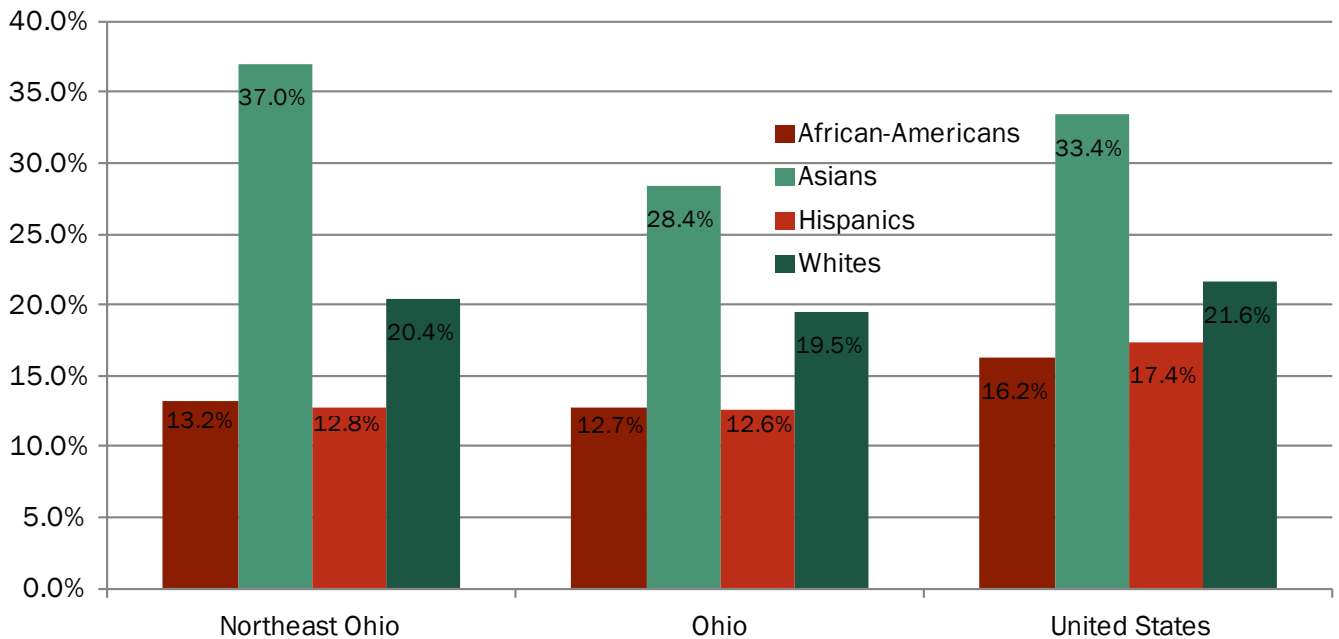
Source: National Science Foundation

Figure 7. STEM Percentage of Total Bachelor's Degrees Awarded By Racial/Ethnic Group, 2009



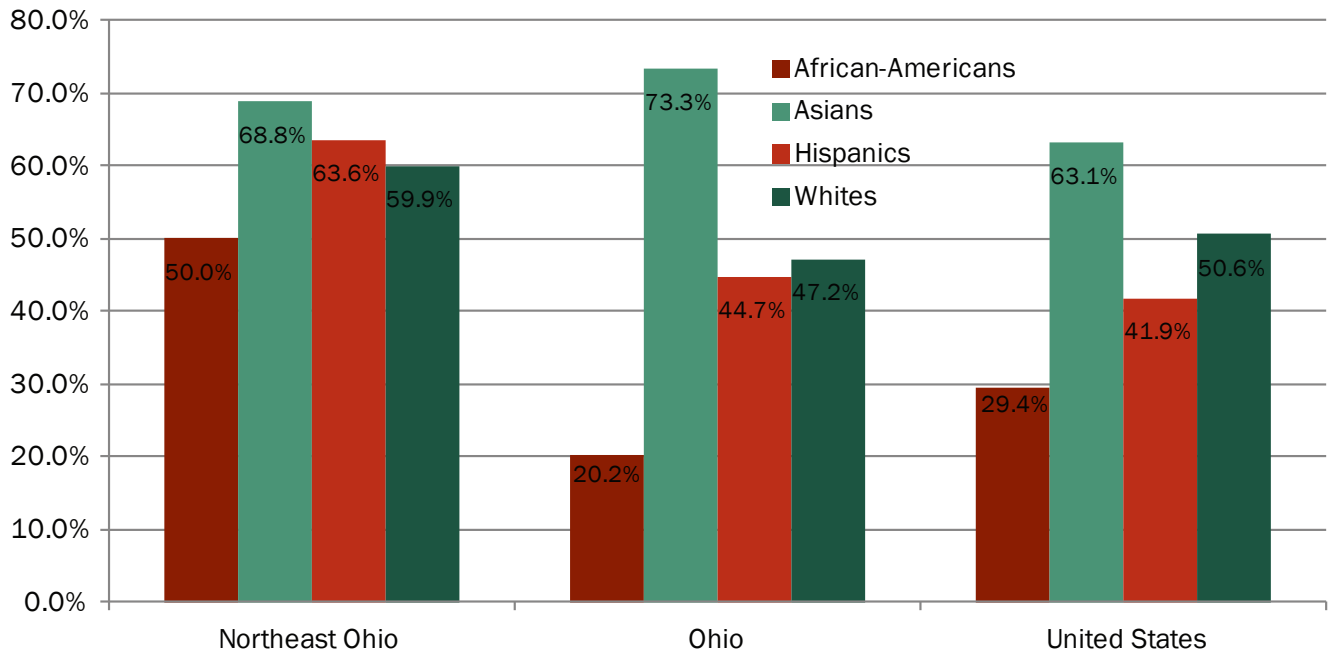
Source: National Science Foundation

Figure 8. STEM Percentage of Total Master's Degrees Awarded By Racial/Ethnic Group, 2009



Source: National Science Foundation

Figure 9. STEM Percentage of Total Doctorates Awarded By Racial/Ethnic Group, 2009



Source: National Science Foundation

As discussed earlier in terms of minority business ownership, when comparing Northeast Ohio to the state of Ohio and the United States, it is important to take into consideration the minority share of the population age 25 and older that resides within each geographic area. The STEM degree share of shares calculates attainment rates in relation to the size of the minority population in a geographic region. If this measure equals 1, the minority STEM degree attainment rate equals the relative size of the minority population in that geography. For African-Americans, the share of degrees earned in Northeast Ohio in 2009 as a ratio of the share of the population over the age of 25 was 0.44. This was less than the share of shares for the state (0.56) and for the nation (0.69). The share of shares for Hispanics in Northeast Ohio was 0.68, compared to 0.73 for the state and 0.48 for the nation. Table 2 provides share of shares by racial and ethnic groups. Note the disproportionately high share of STEM degrees among the region’s Asian population.

Table 2. Share of STEM Degrees As a Share of Population Age 25 And Older by Racial/Ethnic Group, 2009

	Northeast Ohio (11-County)			Ohio			United States		
	Share of STEM Degrees	Share of Pop over 25 yrs	Share of Shares	Share of STEM Degrees	Share of Pop over 25 yrs	Share of Shares	Share of STEM Degrees	Share of Pop over 25 yrs	Share of Shares
Whites	75.73%	83.08%	0.91	77.36%	86.20%	0.90	63.53%	77.35%	0.82
African-Americans	6.03%	13.73%	0.44	5.85%	10.51%	0.56	7.80%	11.27%	0.69
Hispanics	1.62%	2.40%	0.68	1.47%	2.01%	0.73	5.95%	12.37%	0.48
Asians	4.74%	1.47%	3.21	3.50%	1.51%	2.32	8.33%	4.52%	1.84

Sources: American Community Survey, 2005-2009 Estimates; National Science Foundation

Any attempts to improve the flow of minority workers into technology fields will need to address the “pipeline” issue of educational attainment and career choices, focus group participants stressed. So important is the issue of education that one of the two focus groups of business owners spent most of the session discussing the challenge.

Education is the critical differentiator, the business owners agreed. “We have a dynamic community. We have a lot of talent. But the gap between them is education. Education is the biggest failure.”

Focus group participants described the educational challenges as twofold: Encouraging more high-performing students to pursue STEM fields at college and helping students who may lack college aptitude or desire access career ladders in emerging industries. Focus groups participants fault school curricula for failing to connect science, math and technology in the classroom to career paths in the workplace. “We’re educating kids on last century’s model.”

“How have we socialized being in technology?” asked another.

One entrepreneur who hopes to use technology as a teaching tool said he was like so many minority students: As a child, he had little exposure to technology as a transformative tool and a creator of opportunity. But his math scores in high school indicated he had technical aptitude. His demonstrated potential opened educational and professional doors that ultimately have resulted in his starting a business that uses technology as a tool for education. “Many kids today are only exposed to technology from a consumer perspective. The first thing they need to do is deal with the consumer mindset.”

Young people, especially those who don’t see technology use modeled in their homes and communities, need to be exposed to the career opportunities and commercial applications that come from mastering technical skills. Young people also need to be schooled in the opportunities that stem from entrepreneurship. As the research on degrees in STEM fields indicates, fewer black students are drawn to technology and science majors than students from other racial and ethnic backgrounds. Beyond the issue of high school preparation, focus group participants attribute part of the gap to a different “psychology of choices.” Minority students who do go on to college often are drawn to “helping fields,” such as education and social work, participants said. Too few think of creating jobs, especially good-paying ones in high-tech fields, as a way of helping their communities.

Educators and innovators alike need to do a better job of providing young people with an understanding of what skills will help them access and keep good-paying jobs in a changing work environment and with an awareness that good jobs build strong communities. Many of the business owners who participated in the focus groups said they are practicing what they preach: They mentor and reach out to students either through formal programs or informal networks. “The key is starting in high school,” one entrepreneur insisted. “That helps them start mapping out an end goal. Instead of going to college without knowing what to do, they’ll have a plan.”

Another business owner noted the importance of programs that introduce minority students at an early age to local businesses and then put them in line for internships when they are old enough to work. She said her company has had success in encouraging student interns to pursue in-demand fields and return as full-time workers after they graduate from college.

Yet, efforts to instill STEM educational and entrepreneurial ambitions in young people won’t be effective “unless we get parents on the same page and try to change their mindset,” said a budding entrepreneur. “My parents didn’t know how to assist me. I didn’t have that extra push. It was just my way of saying I wanted to be opposite. I saw poverty around me and I didn’t want to be poor.”

Despite a belief in the need to encourage more African-American and Hispanic students to pursue STEM degrees at the college level, focus group members lamented the loss of high school vocational education programs

“We have a dynamic community. We have a lot of talent. But the gap between them is education. Education is the biggest failure.”

**Northeast Ohio
minority entrepreneur**



and apprenticeships. “Back in my day, if you didn’t want to be an architect, then you had some place to go,” said an entrepreneur whose company has developed new uses for industrial waste products. Young people have lost good pathways to the trades. “All these trades are now technology-based. By shutting those schools down, we’ve lost a generation of kids who weren’t meant for college.... We need to have a space for everyone.”

“Where are the transferable skills?” one business owner asked. “There’s no arena for kids to get transferable skills.” One local entrepreneur suggested that apprenticeship programs in information technology, health care and other industries targeted for growth in Northeast Ohio would provide avenues for young minority workers, especially those who lack the money or desire to go to college. “But that would take a corporate-driven, community-driven initiative.”

VIEW FROM THE TRENCHES

Focus groups of African-American and Latino business leaders, entrepreneurs and start-up hopefuls operating in Northeast Ohio’s technology, advanced materials, energy and health clusters identified five critical needs for increasing the capacity and improving the performance of minorities in Northeast Ohio’s high-technology industries. They are:

- Mentoring of aspiring entrepreneurs
- Marketing help
- Seed money, especially help in accessing the first \$100,000 of investment
- A unified one-stop shop for technical, legal and funding services
- An informational message for youth about opportunities in STEM

An informational message alone may help encourage more students into STEM fields, but youth need to see more people of color – more people who look like them – starting and succeeding at high-tech entrepreneurship in order to visualize possibilities. They even need to see people of color starting and failing at business ventures to understand the iterative process. More businesses fail than succeed, but even failures are opportunities to learn. Cleveland venture capitalist David Morgenthaler, who has spent nearly 50 years helping entrepreneurs build companies in information technology and life sciences, has been known to compare the risk-taking culture of the West Coast to a more risk-averse environment in Northeast Ohio. On the West Coast, it’s accepted that not all business ventures succeed. In Northeast Ohio, a stigma of failure makes too many sit on the sidelines and maintain the comfort of “safe” government, corporate or manufacturing jobs. It’s an observation of the entrepreneurial culture of the region as a whole – which his early support for JumpStart and other organizations has helped to change – but it is a sentiment that Latino and African-American business owners see as a particular obstacle in their communities.

In the African-American community, “you kind of get crucified by everyone when you try to go out on your own,” said one focus group member, “especially when you lose money for the first time. [They say] you should have just kept that job.”

Morgenthaler has another observation that speaks to how important it is to have more Northeast Ohioans of all colors launching businesses in high-growth and emerging fields: You can’t predict where lightning is going to strike, but having lots of lightning rods will make you more receptive and better prepared to channel that energy. In other words, to be competitive and primed for the next great technological breakthrough, Northeast Ohio needs many more entrepreneurs of all colors creating “lightning rods.”

Think of the efforts of regional economic development organizations to support and grow targeted industries as investments in lightning rods for Northeast Ohio. The region needs more, many more, to make up for the substantial losses of jobs and entire industries that have accompanied changing technologies and increasing competition. The region needs more, many more, to buttress its economy against ongoing change and threats. Overlaying strategies

for inclusion on this existing framework for innovation should help to stimulate growth and energize the regional economy.

Improving the visibility of minority achievements in high-tech sectors and crafting a consistent message of opportunity will inspire more would-be entrepreneurs and students in African-American and Hispanic communities. Connecting minority businesses to potential partners will help even more. Regional intermediaries need to do more to make minority entrepreneurs feel accepted and work harder to understand their challenges, particularly in accessing early capital. Too often, they feel trapped in a frustrating “chicken-and-egg” dilemma: “[Potential funders] will say we like your concept but when you have a product, we’ll fund you,” said one focus group participant. “But then I say, if you give me money, I’ll get a product.”

Connecting would-be entrepreneurs to successful business owners will start to fill the knowledge gaps that minorities say they face in their start-up efforts. “If there’s not a mentor somewhere along the way, then someone is always going to be falling behind.” Whether it’s knowing that a bright blue suit isn’t standard banking attire or learning how to assess market potential, strong mentors can eliminate hurdles entirely or at least make them seem less formidable.

Connecting Hispanic and African-American students to high-tech businesses – minority-owned and otherwise – will go a long way toward plugging the next generation of workers and employers into the region’s industry clusters. “It’s about how do you turn on the light bulb,” said one focus group member. “The way to turn on the light bulb is through action,” said another. “Let’s just do it now.” They called for mentoring programs, internships and apprenticeships to help “reach kids where they are” and “get them to the next stage.”

**“ Many kids today
are only exposed
to technology
from a consumer
perspective. ”**

**Northeast Ohio
African-American
entrepreneur**

CONCLUSION & RECOMMENDATIONS

Much analysis and action have centered on reinvigorating Northeast Ohio’s economy. Economic development organizations, policymakers, business leaders, colleges and universities, and philanthropists have recognized the urgent need for greater entrepreneurship, specifically in technology fields, and have been working to build the region’s technology infrastructure. Through regional self-assessment and analysis of global markets, through consensus-building and strategic investments, these change agents have collaborated on an action plan for boosting Northeast Ohio’s competitive advantage. They have identified emerging high-growth industries for support. They have seeded entrepreneurial success by improving access to capital, encouraging a risk-taking culture, expanding networking opportunities, identifying markets and addressing workforce challenges. The collective activities of the region’s entrepreneurs themselves and the EDOs that support them are building and expanding a dynamic innovation ecosystem.

Yet, it is clear that not all groups are equally connected into – and served by – this system. Too many African-American and Latino entrepreneurs, workers and students are being left out and left behind as Northeast Ohio transitions toward a technology-intensive mix of industries and activities. This disconnection from the innovation economy harms African-American and Latino workers and communities because it limits incomes and opportunities. This disconnection also impairs the region by diminishing its overall competitiveness.

The reasons for this disconnection are many: personal choices, lack of knowledge, inequality of resources, historic barriers. And the gaps are great:

- Only about 2 percent of Northeast Ohio’s tech-based, growth industries are minority-owned.
- Only 10 percent of employees in such industries are minorities.
- Less than 2 percent of the gross regional product comes from minority-owned enterprises.



Addressing these wide disparities requires comprehensive, collaborative and urgent action. PolicyBridge recognizes that the challenges and the areas of need extend beyond the scope and services of the region's economic development organizations. However, the EDOs' demonstrated ability to work separately and collectively to advance a shared regional economic competitiveness agenda provides the scaffolding on which to build economic inclusion platforms. In their efforts to support entrepreneurship in the region's emerging industry clusters, economic development organizations already are focusing attention on issues critical to business creation and growth. Yet, it is clear that minority entrepreneurs are largely disconnected from these services, have specific challenges of access and require targeted action to "plug them in" to the larger ecosystem of entrepreneurial activity.

What is needed is a way of "keeping score" and tallying minority "wins" for the region. An Economic Inclusion Scorecard would be a visible, accountable sign of the region's commitment to the social ideal and economic imperative that all groups have the ability to access and compete in the types of industries and ventures that are expected to drive Northeast Ohio's future prosperity.

But the commitment and collaboration necessary to transform the region must first come from within the EDOs themselves. Embedded throughout the organizations, from board members and chief executives to staff members and community funders, must be a recognition of the importance and advantages of inclusion. Goals for inclusion must be infused into regional competitiveness strategies and must be allocated adequate resources and import. The EDOs themselves, which have specific areas of focus and expertise, must set their own goals and priorities and devise their own metrics for evaluating progress and success. However, they should set goals that are within reach but aspirational and offer opportunity for significant short-term impact.

Although each EDO should develop its own plan for infusing inclusion into its day-to-day operations and overall strategies, each EDO must work within the common game plan that addresses the four identified deficiencies of entrepreneurship, engagement, employment and education. Not all regional EDOs focus on all four areas; however, they each can work to improve inclusion within their core activities and services. Their progress each year in meeting collective regional goals would be tallied in the Economic Inclusion Scorecard to showcase progress and highlight efforts that worked and those that didn't.

Findings from the quantitative and qualitative analyses suggest the following broad recommendations to improve minority performance and competitiveness in Northeast Ohio's emerging cluster industries.

Entrepreneurship

- Identify minorities already operating in mid-level roles in high-tech sectors and coach them on how to rise to roles of greater leadership and visibility. This will increase the number of African-Americans and Hispanics who are managing or owning cluster firms.
- Tailor an entrepreneurial high-growth message toward an existing pool of high-tech minority workers. Table 3 estimates minority non-employers in Northeast Ohio industries. Non-employers are mostly self-employed individuals. It is not known whether these individuals are full- or part-time workers, only that they have no employees in their business ventures. This tabulation was created specially by the U.S. Census Bureau for this report. As can be seen, the African-American and Hispanic communities in Northeast Ohio accounted for a larger portion of total non-employer firms than they did of employer firms (Table 1). In 2007, there were 1,738 (± 389) non-employer, high-tech firms owned by African-Americans and 411 (± 191) owned by Hispanics. Not all of these minority non-employer firms could be grown into employer firms, but they provide a potential pool of talent experienced in high-tech industries as well as business operations.
- Expand and deepen mentoring programs for aspiring minority entrepreneurs. Each EDO should focus on its particular clusters of support but coordinate and collaborate with partnering agencies to ensure needs are served but duplication is minimized.

Table 3. Minority Non-Employers in Northeast Ohio, 2007

Northeast Ohio Employers (11-County)				
Firms			Receipts (\$000)	
	Count	Error ±	Count	Error ±
High-Tech				
African-American Owned	1,738	389	\$31,446	\$14,591
Hispanic Owned	411	191	\$18,108	\$11,010
All Firms	34,809	1,671	\$1,243,895	\$179,121
All Industries				
African-American Owned	20,140	644	\$380,822	\$36,559
Hispanic Owned	2,690	689	\$110,848	\$63,848
All Firms	230,225	3,684	\$9,675,540	\$619,235

Sources: U.S. Census Bureau, Survey of Business Owners

- Facilitate partnerships among existing businesses and organizations to offer minority entrepreneurs their quickest route to market for their products.
- Understand the particular capital constraints minorities face and provide help in accessing start-up funds.
- Promote a unified one-stop shop for funding, technical, legal and marketing services.
- Establish performance metrics for key staff at economic development organizations that align minority entrepreneurship outcomes with performance reviews and other compensation incentives.
- Measure progress annually in minority business development in the region’s technology clusters.

Engagement

- Reach out to minority entrepreneurs and minorities working in or studying STEM fields to invite them to participate in networking activities that connect them to the region’s identified emerging high-technology industry clusters.
- Establish performance metrics at economic development organizations that tie outreach to minority entrepreneurs and communities to performance reviews and other compensation incentives.
- Ensure that adequate funding, staffing and technology resources are allocated by regional EDOs to reach out to minority communities and maintain inclusive networks.
- Expand on JumpStart’s pilot First Client Initiative to connect minority entrepreneurs and businesses with established institutions and corporations.
- Build on JumpStart’s Best and Brightest Initiative to bring existing minority organizations and leaders into the technology ecosystem as advisers, mentors, angel investors and board members.
- Sponsor minority business conferences to expand the pipeline of African-American and Hispanic entrepreneurs through networking, information-sharing and educational activities.



- Develop intermediary capacity specifically to help African-Americans and Hispanics connect with Northeast Ohio’s existing innovation ecosystem. Added attention should be paid to ramping up capacity and presence in communities outside Cuyahoga County, where much of the inclusion efforts have been concentrated thus far.
- Provide “microloans” to enable cash-strapped minority start-ups to access the knowledge and networks of industry conferences and professional memberships.
- Include minority business leaders among regional task forces and advisory boards to bring their views to the table.

Employment

- Use the leverage of city and county government contracts to encourage companies to hire minority students for summer internships. Summer internships at technology and engineering firms, as well as banks and law practices, will help make students aware of career opportunities in the region and requirements to access those careers.
- Explore opportunities to help minorities with transferable skills move into higher-paying jobs in high-technology industries.
- Employ “good corporate citizen” peer pressure to encourage businesses throughout the region to reach out to young people – minority and non-minority – to expose them to careers and opportunities available in Northeast Ohio. Capturing and embedding young talent in Northeast Ohio industries will help to improve regional competitiveness overall and deepen the pool of qualified workers for individual companies.
- Acknowledge the onerous employment challenge faced by a disproportionately high percentage of African-American men who have felony records – many for drug-related offenses – and work with technology firms to develop “second-chance” opportunities.
- Create a blended venture philanthropy and enterprise development model to focus on STEM education, mine regional talent and anticipate the workforce needs of cluster industries.
- Commit to measuring progress annually in minority employment in the region’s technology clusters.

Education

- Measure progress in encouraging more African-American and Hispanic students to pursue STEM degrees and careers in STEM fields.
- Develop an informational campaign targeted toward minority students in high school and middle school to raise their awareness of opportunities in STEM fields and encourage them to pursue an academic path that will prepare them for such opportunities.
- Partner with area manufacturers to develop apprenticeship programs, short-term certifications and other hands-on training options to address shortages in in-demand technical skills.
- Reach out to school districts serving high minority populations to alert counselors and teachers to in-demand technical skills and career pathways.



Infusing inclusion into Northeast Ohio's innovation economy presents a challenge – a challenge that has too long been ignored and that seems too politically, financially or socially difficult for isolated agencies to tackle. Yet, Northeast Ohio's economic development organizations have taken a critical collaborative step: assessing the divide. The next step is for these EDO boards to unite behind a common plan for action and adopt broad policies of support. Underperformance among African-Americans and Latinos must be recognized as a threat to regional competitiveness and treated with the urgency it warrants. But with such high stakes also comes the opportunity for high reward. Growing minority entrepreneurship in the region's emerging industry clusters, expanding the number of minority workers in high-tech occupations and encouraging more minority students to pursue training in the sciences, technology, engineering, math and medical fields offer the potential to transform Northeast Ohio. In a regional economy once driven by its innovators' and workers' proficiency in building powerful engines, championing the importance of all groups "firing on all cylinders" is more than symbolic metaphor. It's a revolutionary model for economic growth and competitiveness.



SELECTED REFERENCES

- American Community Survey, 2005-2009 Estimates.
- American Community Survey Public Use Microdata Sample.
- Dice. 2010-11 Tech Salary Survey Results: Tech Workers Feel “Infinite Loop” as Wages Remain Flat. Available: <http://marketing.dice.com/TechSalarySurvey/>
- Kane, T. (2010, July). The Importance of Startups in Job Creation and Job Destruction. Kauffman Foundation Research Series: Firm Formation and Economic Growth. Available: <http://www.kauffman.org/research-and-policy/the-importance-of-startups-in-job-creation-and-job-desctruction.aspx>
- Kilcoyne, P. (2001). High-Tech Occupations by Metropolitan Statistical Area. Bureau of Labor Statistics. Available: <http://data.bls.gov/search/query/results?cx=013738036195919377644%3A6ih0hfrgl50&q=technology+inurl%3Abls.gov%2Foes>
- Lendel, I., & Park, S. (2011, February 10). “Northeast Ohio High-Technology Economy Report.”
- Maltby, E. (2012, March 6). Are Small, Tech-Savvy Firms Top U.S. Job Creators? Wall Street Journal online. Available: <http://online.wsj.com/article/SB10001424052970203370604577265543176919450.html>
- Milian, M. (2011, November, 14). Do black tech entrepreneurs face institutional bias? CNN. Available: <http://edition.cnn.com/2011/11/11/tech/innovation/black-tech-entrepreneurs/>
- Ohio’s K-12 STEM Education Report Card 2011. U.S. Innovation.org. Alliance for Science & Technology Research in America. Available: <http://www.usinnovation.org/State-stem-ed-reports>.
- The Plus: Northeast Ohio. (2011, January 17). Innovating Education at Northeast Ohio’s STEM Schools. Available: <http://www.theplus.us/en/Know/2011/January/STEM.aspx>.
- President’s Council on Jobs and Competitiveness. (2011, October). Taking Action, Building Confidence: Five Common-Sense Initiatives to Boost Jobs and Competitiveness. Available: <http://www.jobs-council.com/2011/10/10/jobs-council-releases-taking-action-building-confidence-interim-report-to-the-president/>
- Sanyal, P., & Mann, C.L. (2010, December). The Financial Structure of Startup Firms: The Role of Assets, Information, and Entrepreneur Characteristics. Federal Reserve Bank of Boston. Working Paper No. 10-17. Available: <http://www.bos.frb.org/economic/wp/wp2010/wp1017.htm>
- Stangler, D., & Litan, R.E. (2009, November). Where Will the Jobs Come From? Kauffman Foundation Research Series: Firm Formation and Economic Growth. Available: <http://www.kauffman.org/research-and-policy/where-will-the-jobs-come-from.aspx>
- Technology CEO Council. (2012). High Impact: How IT Is Empowering the Next Generation of Entrepreneurs. Available: [http://www.techceocouncil.org/clientuploads/reports/TCCHighImpact3-5-12\[1\].pdf](http://www.techceocouncil.org/clientuploads/reports/TCCHighImpact3-5-12[1].pdf).
- U.S. Census Bureau. Survey of Business Owners.