

# PREPARING STUDENTS TO PERFORM IN YOUR REGION'S STEM-FOCUSED COMPANIES

**T**he number of occupations requiring STEM capabilities is growing. Between 2003 and 2010 the number of workers reporting that their job requires at least a bachelor's-degree level of facility in STEM increased 28 percent, from 12.9 million to 16.5 million. STEM graduates who work as

professional research and development scientists and engineers (so-called *STEM narrow skills*) are predicted by Bureau of Labor Statistics projections to outpace overall U.S. job growth by about 4 percentage points between 2012 and 2022. Individuals who apply STEM knowledge and skills in technologically sophisticated occupations that require a facility with STEM concepts but not necessarily a bachelor's degree (so-called *STEM broad skills*) are expected to do even better. In fact, STEM broad jobs already outnumber STEM narrow ones—often by an order of magnitude—according to a 2016 report by the National Academies of Sciences, Engineering, and Medicine, *Promising Practices for Strengthening the Regional STEM Workforce Development Ecosystem*.

When businesses work in collaboration with colleges, universities, and other community stakeholders, opportunities are bolstered for students to gain these valuable skills the market demands. Today, chambers of commerce have a tremendous opportunity to serve as an intermediary in their community to facilitate university-industry partnerships and thereby advance regional STEM workforce development ecosystems. Developing and sustaining business-education collaborations that are more than one-off connections will be difficult without the planning, convening, brokering, and evaluating functions that a trusted intermediary provides.

## CHAMBERS OF COMMERCE AT WORK

The following projects by chambers of commerce across the country exemplify the critical roles third-party intermediaries are playing in fostering and maintaining cross-sector collaboration and connectivity.

**Bridging Communication Barriers—Dayton, OH.** As the voice of business for the Dayton region, the Dayton Area Chamber of Commerce works closely with Learn to Earn Dayton, a cradle-to-career Collective Impact initiative, by serving as the primary conduit to the business community. The Chamber identified Workforce Development

as one of its 2015 Business Plan strategic objectives. Under this plan, they committed to establish a data driven analysis of career opportunities in key industry sectors—such as aerospace, advanced engineering, advanced manufacturing, logistics and transportation, business services, and bioscience and health care—to identify and establish clear pathways and incentives for meeting objectives in high demand industries within the region. As a result, the Chamber seeks to develop a web presence and marketing campaign to promote the skills regional employers seek, along with available local education and career pathway opportunities.

## What can your chamber do?

- Bridge cultural and communication barriers between local employers and universities.
- Help employers and universities understand your region's competitive advantages by addressing data needs.
- Bring promising partnership activities to scale.
- Connect with other chambers of commerce that have facilitated the creation of effective workforce development partnerships to discuss best practices.
- Host a meeting with employers, university administrators, and faculty to introduce the contents of the Academies' report and illustrate strategies such as facilitating advisory boards, creating simulated work-based learning experiences, and establishing faculty exchanges.

**Promoting a Common Vision—Omaha, NE.** The Greater Omaha Chamber is working with key partners from K-12 and higher education institutions as well as the Workforce Investment Board to create an education pipeline in the area of Information Systems and Technology, a high-need workforce sector, and to identify challenges and opportunities in building strong curriculum and programs to support this sector. Efforts include developing a community marketing campaign to promote the skills needed in this industry and publicizing available education and career opportunities.

**Defining Indicators—Louisville, KY.** The Business Leaders for Education (BLE), a task force of Greater Louisville, Inc., the region's Chamber of Commerce, led a multiyear assessment of educational outcomes and promoted adoption of a bold aspiration goal of adding 55,000 additional degrees—40,000 baccalaureate degrees and 15,000 master's degrees—to the region's workforce. The community united around the Greater Louisville Education Commitment, signed by 25 leaders. They created a new nonprofit, 55,000 Degrees, to serve as steward of this commitment. BLE identified areas of comparative advantage and the major firms in those sectors, including: value-add logistics (UPS), food and beverage science (regional distillers and YUM), advanced manufacturing (GE appliances) and health and wellness (numerous research hospitals and a major health insurer). 55,000 Degrees targeted students in middle school and high school with the goal of increasing college enrollment and success. Greater Louisville, Inc., with a grant from the Lumina Foundation, focused on adult learners—those with some college but no degree—to contribute to this goal and align workforce development with the needs of sectors vital to the region's growth.

## Tips for Effective Workforce Development Partnerships

- Convene, connect, and broker, while transcending possible conflicts and competition among partners
- Measure and evaluate, which requires defining indicators, establishing standards, and facilitating systematic evaluations
- Build awareness among partners and work towards a common vision
- Understand the data—map existing programs, gather labor market information, and conduct sector analysis

**Addressing Data Needs—Greensboro, NC.** In 2012, the Greensboro Chamber of Commerce conducted a workforce survey, which revealed a critical skills gap in aviation and aviation-related manufacturing, and a workforce lack of STEM skills in Guilford County. These findings fueled the Chamber's efforts to convene a highly successful Aviation Triad Initiative—a collaboration between three cities and other key stakeholders, including five community colleges and aviation companies—to raise student enrollment in Aviation training programs and careers. The Chamber is now working to conduct a new survey and expand the initiative to reconnect the untapped talent of returning military personnel to higher education and career opportunities.

**Building a Regional Collective—Aurora, IL.** Aurora Regional Chamber of Commerce is a key stakeholder in Pathways to Prosperity, a regional, collective impact effort among the Chamber, four school districts, a community college and the City to develop initial career pathways in information technology, health sciences and advanced manufacturing. Utilizing strong input from regional employers and statewide leaders, Aurora partners are working to align existing programs with current and future business needs, and to ensure the initial pathways include opportunities for internships, dual credit and stackable credentials.

This brief is based on the findings and recommendations in  
*Promising Practices for Strengthening the Regional STEM Workforce Development Ecosystem* (2016).

Copies of the report are available from the National Academies Press; please call (800) 624-6242 or visit the NAP website at <http://www.nap.edu>.

For more information please contact the Board on Higher Education and Workforce at (202) 334-2700 or [bhew@nas.edu](mailto:bhew@nas.edu).

For more information about the examples from the chambers of commerce cited in this brief,  
please visit <http://www.acce.org/divisions/education-attainment-division>.