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University of
Pittsburgh



CECE

INNOVATION AND ECONOMIC PROSPERITY UNIVERSITIES
AWARDS PROGRAM

CASE
STUDY
2020

IEP CATEGORY – PLACE

University of Pittsburgh: Manufacturing Assistance Center

ABOUT UNIVERSITY OF PITTSBURGH'S MANUFACTURING ASSISTANCE CENTER

Inside a refurbished red brick warehouse high-speed tools and a state-of-the-art maker space transform materials, including wood and steel, into innovative products or components for new processes. But, beneath the surface, the [Manufacturing Assistance Center \(MAC\)](#) fabricates something else entirely for the individuals trained here: crucial turning points and for some second chances.

The MAC is located in the historic neighborhood of Homewood with a rich history as a center for Black arts and culture. But, similar to other areas in the nation that have been marginalized by racism and divestment, Homewood struggles with high unemployment and poverty and has yet to experience the benefits of Pittsburgh's economic transformation. But the community shows signs of a revival, and the MAC is part of these revitalization efforts.

Three years ago, the MAC moved its location from Harmar Township, a suburb of Pittsburgh, to a 9,000 square-foot facility in Homewood in order to provide greater access to training among residents of Pittsburgh. Returning to the city enables the MAC to be a driver of inclusive workforce development, connecting manufacturing companies that years ago moved to suburban industrial parks with a skilled workforce previously uninvolved in manufacturing. One local study predicts that the western Pennsylvania region will have 30,000 openings in advanced manufacturing fields in the next five years.

The MAC offers training modules in

- Machining
- Computer Numerical Control (CNC) programming
- Computer-aided Design/Computer-aided Manufacture
- Advanced CNC machining



Manufacturing Assistance Center (MAC) new location in Homewood, PA

GEARING THE UNDERREPRESENTED WITH SKILLS

Forty percent of those trained at the MAC live in under resourced city neighborhoods, including Homewood, and 31% have been previously incarcerated. (The incarceration of one inmate in Pennsylvania costs more than \$40,000 a year, according to the Vera Institute of Justice). The MAC trains approximately 60 to 80 individuals a year. Ninety-five percent of those who complete the programs are placed with one of 120 companies in jobs that pay on average between \$18 to \$20 an hour. The MAC's programs are largely funded by grants from the Pennsylvania Department of Labor & Industry and from the companies, so there is no tuition cost for individuals. However, because tuition is funded through a patchwork of sources, the MAC is vulnerable to shifts or cuts in state or grant funding, which is a key challenge.

The MAC makes critical contributions to the diversification of the region's STEM workforce and strides that address persistent economic disparities faced by low-income Black Pittsburghers. In Homewood, for example, 41% of residents live below the poverty line (70% of those who are under the age of 18 live in poverty), and 24% are unemployed. There are also gender and race disparities in the median household income; the average household income for Black families in the Pittsburgh region is \$26,108 and \$51,098 for White families. The MAC recruits heavily from neighborhoods with larger percentages of residents who are unemployed, underemployed, or are living below the federal poverty line. The MAC's outreach to faith-based organizations, community-based organizations, employment offices (such as PA CareerLink), governmental and nonprofit organizations (such as Chambers of Commerce and municipalities) have resulted in improved recruitment of community residents. The MAC's association with the University and ties to the Swanson School of Engineering contribute to the diversity among the trainee population while adding capacity to small workforce development organizations that it partners with. The MAC, for example, offers a summer course in machining for high school and college students, which draws students from urban and surrounding suburban areas.

MAC's Veteran Initiatives

The MAC's work with veterans provides an excellent example of its transformative impact. The MAC's long established, six-week intensive training program for veterans has successfully placed former service members at some of the top advanced manufacturing firms in the United States. This work relies on partnerships with the University of Pittsburgh Office of Veterans Services, Allegheny

County Department of Veterans Services, PAServes, several regional workforce investment boards, and PA CareerLink and on recruiting at several local bases and Veterans Affairs. Of particular note is a partnership with the Veterans Place in Pittsburgh, which has assisted 28-30 homeless veterans in finding housing and stable employment through the training provided at the MAC.

ELEVATING THE INNOVATION ECOSYSTEM

The MAC also strengthens the maker to manufacturing innovation ecosystem in Homewood and surrounding underserved communities. For example, the MAC has a partnership with Prototype Pittsburgh, a local organization dedicated to gender and racial equity in technology and entrepreneurship. In conjunction with Prototype Pittsburgh, the MAC offers workshops, such as Lasers and Ladies, which teaches the basics of using lasers. Other workshops strengthen women's skills in auto repair, wood tooling, 3-D printing, and salary negotiation.

Local entrepreneur Gabrielle Hayward, for example, used the MAC to scale up manufacturing of her stylish, knee-high swimsuits for women, called "the Knee-Kini," which she started making from her home in the city. Consulting from the University of Pittsburgh's Institute for Entrepreneurial Excellence (IEE) through the MAC allowed her to increase the production of her swimwear line. Her business was recently accepted into Pittsburgh accelerator AlphaLab Gear, which helps to grow and build early-stage businesses.

Another compelling initiative is part of a larger collaboration that brings together makerspaces across the world and the city to develop and produce face shields in order to provide personal protective equipment needed by those fighting the COVID-19 pandemic. In partnership with the nonprofit Protohaven, the MAC has produced more than 1,000 face shields so far, which are being sent to hospitals.

With such success stories, the MAC stands as a forward-looking model of the land-grant mission by matching the workforce needs of the region's small- to mid-size manufacturers with residents seeking good, high-paying jobs. More broadly, the work of the MAC and its many partners in Homewood helps to ensure that the region's economic transformation is shared more equitably among the city's neighborhoods.

LINKS TO FURTHER INFORMATION

Articles:

- [Manufacturing Assistance Center Connects Communities with Technical Skills, Careers](#)

Partnering Organizations:

- [University of Pittsburg](#)
- [PA CareerLink](#)
- [University of Pittsburgh – Swanson School of Engineering](#)
- [University of Pittsburgh – Office of Veterans Services](#)
- [Allegheny County Department of Veterans Services](#)
- [PAServes](#)
- [Veterans Place](#)
- [Prototype Pittsburgh](#)
- [The Institute for Entrepreneurial Excellence](#)
- [Protohaven](#)

ABOUT APLU

The Association of Public and Land-grant Universities (APLU) is North America's oldest higher education association. APLU is a research, policy, and advocacy organization dedicated to strengthening and advancing the work of public universities in the U.S., Canada, and Mexico. The association's membership consists of public research universities, land-grant institutions, state university systems, and affiliated organizations.

APLU's mission is to: expand access and improve student success to deliver the innovative workforce of tomorrow; advance and promote research and discovery to improve society, foster economic growth, and address global challenges; and build healthy, prosperous, equitable, and vibrant communities locally and globally.

Based in Washington, DC, the association's work is furthered by an active and effective advocacy arm that works with Congress and the administration as well as the media to advance federal policies that strengthen public universities and benefit the students they serve.

ABOUT THE IEP UNIVERSITIES PROGRAM

APLU and its **Commission on Economic and Community Engagement (CECE)** established the Innovation and Economic Prosperity (IEP) Universities Program to help higher education institutions codify, elevate, and advance their campus enterprise supporting economic and community development.

The **IEP designation program** recognizes institutions that have demonstrated a meaningful, ongoing and substantial commitment to economic and community development, growth, and economic opportunity.

The **IEP awards program** recognize exemplary and innovative projects in university-based economic and community engagement:

- **Talent** and workforce development
- **Innovation**, entrepreneurship, and tech-based economic development
- **Place** development through public service, outreach, and community engagement

Learn more at: www.APLU.org/IEP