Driving Innovation: The City/University Partnership

In many ways, Pittsburgh’s transformation over the past three and a half decades is a story about how university, foundation, business and public sector leaders came together to chart a new course for the region’s economic future – one anchored by technology and innovation.

Today, early investments in institutions such as Carnegie Mellon University’s (CMU) Robotics Institute – established in 1979 and now the world’s largest robotics R&D organization – are paying off. Already the birthplace of autonomous vehicles, Pittsburgh is also the epicenter of this rapidly emerging industry. Hundreds of millions of private dollars have been invested in recent years in autonomous vehicle companies in Pittsburgh. And these technologies are being tested and deployed throughout the region’s streets, due to unique partnerships between universities, government, and the private sector.

In March of this year, the City of Pittsburgh and four of the region’s leading autonomous vehicle companies – Aptiv, Argo AI, Aurora Innovation, and Uber – agreed to guidelines concerning autonomous vehicle testing on public streets. These guidelines, which are the most extensive in the world, are coordinated through Pittsburgh’s Department of Mobility and Infrastructure. The city partners with CMU for technical expertise to ensure compliance with the guidelines. The policies cover everything from safety and data sharing, to transportation and communication for all autonomous vehicle testing on public streets.

City of Pittsburgh Mayor Bill Peduto has consistently looked for innovative ways to make government more effective and efficient to improve residents’ lives. This leadership has been critical to the relationship between the city and CMU. In 2014, when Debra Lam served as Pittsburgh’s Chief of Innovation and Performance, a Memorandum of Understanding (MOU) was signed by the university and the city government. The MOU established conditions that would be essential to the success of the research, development, and deployment of technologies and efforts of CMU’s smart cities institutes – Metro21 and Traffic21. A nearly identical MOU was also signed between CMU and Allegheny County.

Led by Stan Caldwell, Traffic21 works to identify, refine, and deploy intelligent technologies within the region’s transportation system. Metro21, led by Karen Lightman, was spun out of Traffic21 in 2014 to address the broader challenges facing cities, such as water and sewer systems, environmental concerns, and other mobility-related challenges.

In 2018, Pittsburgh International Airport and CMU announced a groundbreaking partnership that allows faculty and students from Metro21 to research, develop, and deploy a series of innovative projects designed to enhance the traveler experience at the airport. The success of the Pittsburgh public-private-university partnership around smart cities and autonomous vehicle technologies in Pittsburgh is a result of strong lines of communication between relevant stakeholders.
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In 2017, the City of Atlanta announced an expanded research partnership with Georgia Tech, designating the university as the official research partner for the North Avenue Smart Corridor project. Furthermore, the City of Atlanta, Georgia Tech, and Georgia State University are founding members of the MetroLab Network, a national network of cities and universities focused on the research, development, and deployment of new technologies and approaches to urban challenges. The City of Pittsburgh, CMU, and the University of Pittsburgh are also members. Pittsburgh’s and Atlanta’s leadership in smart cities technologies was recognized when both cities were selected by Transportation for America as two of 22 communities to participate in the second cohort of their Smart Cities Collaborative Program.

Pittsburgh has become a model for how government, universities, foundations and the private sector can work together to fund, develop and deploy forward-thinking research and technologies that are transforming the way we move about the world. In Pittsburgh, we will explore the history, present and future of this partnership. What is needed to make a partnership like this work? What can Metro Atlanta learn from Pittsburgh to advance our own public-private-university partnerships around smart cities technologies to improve residents’ lives?

Further Reading

Mayor Peduto, self-driving car companies announce ‘Pittsburgh Principles’
   Pittsburgh Post-Gazette – March 4, 2019

How America’s dying rust belt town can transform into “smart cities” of the future
   Fast Company – January 14, 2019

Carnegie Mellon inks deal to help create ‘smartest airport on the planet’
   Pittsburgh Post-Gazette – April 9, 2018

Pittsburgh will be part of Smart Cities Collaborative on transportation issues
   Pittsburgh Post-Gazette – April 5, 2018

Capturing the next economy: Pittsburgh’s rise as a global innovation city
   Brookings – 2017

Pittsburgh Gets Tech Makeover

No Driver? Bring It On. How Pittsburgh Became Uber’s Testing Ground

The Robots That Saved Pittsburgh
   POLITICO Magazine – February 4, 2014