

## Building Regional Innovation Economies

United States House of Representatives Committee on Science, Space, and Technology

Subcommittee on Research and Technology

Written Testimony of Paula Nas

Director of the Office of Economic Development at the University of Michigan-Flint

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Chairwoman Stevens, Ranking Member Waltz, and distinguished members of the Subcommittee, thank you for the opportunity to testify today. It is an honor to share my views about the importance of the U.S. Economic Development Administration's (EDA) support for the development of regional innovation economies, as well as opportunities and challenges for expanding this role. I am the Director of the Office of Economic Development at the University of Michigan-Flint, where the UM-Flint EDA University Center for Community & Economic Development<sup>1</sup> is housed. I also hold an appointment as a Lecturer of Economics at the University of Michigan-Flint.

### **About UM-Flint's EDA University Center for Community & Economic Development**

UM-Flint's EDA University Center is one of two EDA University Centers in the state of Michigan, and one of 64 such centers nationwide. The stated purpose of EDA's University Center program is to "enable institutions of higher education and consortia of institutions of higher education to establish and operate University Centers specifically focused on leveraging university assets to build regional economic ecosystems that support innovation and high-growth entrepreneurship, resiliency and inclusiveness. By responding to the economic development needs of their regions, University Center programs are demand-driven by nature."<sup>2</sup>

The University of Michigan-Flint EDA University Center for Community & Economic Development coordinates, informs, and contributes to economic development efforts that cultivate innovation, support proof-of-concept development and commercialization, and provide employer-identified workforce development programs needed to build and sustain a resilient, inclusive economy. The primary service area of our EDA University Center is the I-69 Thumb Region of Michigan, which includes Genesee, Huron, Lapeer, St. Clair, Sanilac, Shiawassee, and Tuscola counties. This 7-county economic development partnership encompasses urban, rural, and suburban areas with diverse populations united by a unique opportunity to drive innovation around regional strengths in manufacturing, education, and healthcare industries. While our mission is focused on the I-69 Thumb Region of Michigan, our reach extends far beyond -- well into Southeast Michigan, and often beyond state borders. Our scope of work is divided into three categories as detailed below.

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<sup>1</sup> <https://www.umflint.edu/office-economic-development/eda-university-center-for-community-economic-development/>

<sup>2</sup> <https://www.eda.gov/programs/university-centers/>

**Data Collection, Analysis, and Visualization** Since the inception of the UM-Flint EDA University Center five years ago, our staff and student research assistants have collected, visualized, analyzed, and disseminated data from numerous and varied sources, including the U.S. Census Bureau, as well as information from our economic development partners throughout the region.<sup>3</sup> With these data we have developed a robust online mapping application along with a series of static maps for the region. We respond to the needs of government, economic developers, non-profits, and the business community by providing research support through a wide variety of projects, including GIS mapping of assets, an annual business climate survey, retail leakage analyses, IMPLAN economic impact analyses, and workforce development studies, among others. The broad range of services we provide has positioned our EDA University Center as a convener for economic development leaders in our region as well as a local data intermediary. In response to the needs of our economic development partners, we are now expanding our asset mapping capabilities so that we will have the tools to perform hazard mitigation analysis of the region to identify adaptive and coping capacities to various stressors including limitations in transportation logistics, access to necessary healthcare resources, broadband, and housing. These findings will be disseminated to regional stakeholders to raise awareness of potential gaps that need to be addressed and to help support a data-driven approach to regional economic development.

**Innovation and Entrepreneurship** UM-Flint's EDA University Center offers a suite of programs to assist entrepreneurs and innovators from ideation to launch, and eventual commercialization of their innovation. We continue to develop new initiatives to strengthen and foster a more inclusive entrepreneurial ecosystem. The Michigan Wolverine Innovation Network<sup>4</sup> (MWIN), which launched this year, lays the foundation for interdisciplinary student capstone courses and the commercialization of faculty research. MWIN seeks to create a campus culture of innovation, creativity, and the entrepreneurial mindset throughout all academic disciplines. This is achieved through building relationships among faculty, students, and community and industry partners to solve entrepreneur-, community-, and industry-identified problems and leveraging institutional resources for proof-of-concept commercialization. The EDA University Center continues to be a key element in the local entrepreneurship ecosystem, providing counseling and programs for entrepreneurs at all stages, and of all ages, including programs beginning in elementary school. As a trusted partner in the community, our EDA University Center often serves as the entry point for innovators who might not otherwise attempt to move their ideas forward.

**Workforce Development** As a connector between campus and industry partners, we use a data driven approach to address workforce development gaps in the region. One example is our newly launched Cybersecurity Training Center, which offers Michigan's I-69 Thumb Region opportunities for industry-recognized credentials to prepare individuals of all ages and experience levels for the dynamic digital challenges of the 21st century. UM-Flint is well positioned to address the workforce needs of a population that will need to adapt to the changing

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<sup>3</sup> [www.mapflint.org](http://www.mapflint.org)

<sup>4</sup> [www.mwin.org](http://www.mwin.org)

labor market by designing certificate programs and curricula that are flexible and nimble as the needs of industry change. As education and workforce development become better aligned with the evolving future of work, this also creates a pathway out of poverty for workers who will have expanded opportunities to explore a broader range of career possibilities.

### **Regional Innovation Economies**

Research on building effective innovation ecosystems points to the importance of interactions among key actors in the region. Typically, these include institutions of higher education, industry, government, funders, and economic development organizations, among others. Likewise, there is consensus on the need for research and development, access to capital, mentors, innovation labs, and training programs. All of these elements are necessary conditions for creating a thriving innovation environment that spurs innovation and contributes to regional economic growth.

What is often left out of this conversation is the fundamental issue of how one enters this complex system, and what the barriers to entry are. How do we, as key players in the ecosystem, make a concerted effort to minimize or completely eliminate those barriers? Once an innovator has entered, how do we best provide them with the tools and knowledge needed to navigate the system? The development of regional innovation economies can be an engine of economic growth, but if that growth is going to be sustainable, we must provide additional avenues of access to those individuals who are at risk of being left out, particularly innovators from underserved communities in both urban and rural areas.

Much of the work of our EDA University Center is dedicated to solving these issues. For example, recognizing the complexities of navigating the vast network of entrepreneurial service providers, we have developed an online tool, MISTartSmart,<sup>5</sup> which provides a streamlined approach for entrepreneurs and innovators at any stage of business to locate and connect with entrepreneurial service providers in our region.

Through the UM-Flint EDA University Center, we have had the opportunity to serve as an entry point for a diverse group of regional entrepreneurs, delivering services to over 2,000 individuals over the past five years. I would like to share one example of an innovator who found an entry point into the ecosystem through UM-Flint's EDA University Center.

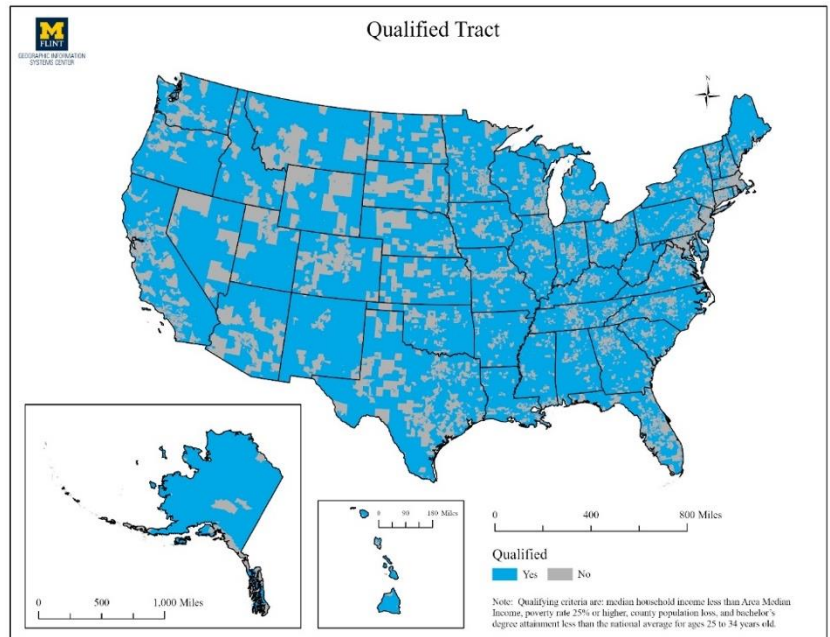
A community member named Linda was inspired by her deaf mother to develop technology to help deaf and hard of hearing communities. Linda launched an emerging technology company, Bell Tech Communications, which seeks to meet the needs of the deaf and hard of hearing communities. Bell Tech Communications has developed English-to-ASL real time translation software and hardware that removes learning barriers by teaching ASL speakers English grammar and sentence structure in addition to the ASL equivalent translation. This technology is targeted at young deaf speakers and their families as well as essential service providers and health professionals who might otherwise need interpretation services. Bell Tech has been developing its concept for several years and is currently raising capital and preparing to establish

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<sup>5</sup> <https://mistartsmart.com>

its headquarters in Genesee County. Bell Tech and its founders have been supported by the UM-Flint EDA University Center staff through ongoing one-on-one counseling, workshops, and resource connections including personnel and funding opportunities. Linda is an excellent example of a local innovator who may not have entered the ecosystem without the support of our EDA University Center.

Defining innovation broadly, we also work with government, non-profits, and the business community to support their innovative approaches to problem solving using our research expertise and GIS technology. As an example, in 2018 two U.S. Senators introduced bipartisan legislation in support of post-graduation scholarships. A staff member of one of the Senators contacted the UM-Flint EDA University Center to see if we could use GIS mapping to create an interactive tool to visualize geographic areas that would qualify for the program proposed by the legislation based on the poverty rate, median household income, educational attainment, and population loss. Our GIS Center created static and interactive maps using these data so that the lawmakers would be able to view and demonstrate to others the areas nationwide that would qualify for the program.



There are many more examples that demonstrate the value of our EDA University Center as an entry point in the innovation ecosystem for entrepreneurs, as well as a source of technical assistance for government and community organizations that are overburdened or lack the capacity to complete the research needed to analyze the impact and value of initiatives. Without EDA funding, none of this work would have been possible.

In addition to minimizing barriers to entry in the ecosystem, we have also discovered the importance of creating a culture and foundation for innovation. There is some amount of investment in infrastructure that is needed to support regional economic development. Our EDA University Center provides technical assistance for regional economic development partners as they move forward in planning and implementing these new projects. Moreover, to build a strong foundation for a sustainable innovation economy it is also essential for regional partners to create programs that foster the entrepreneurial and innovation mindset. For example, to address that gap, the UM-Flint EDA University Center has developed a suite of offerings that introduce campus and community partners of all ages to entrepreneurship and innovation. Through

programs on campus, such as faculty innovation fellows,<sup>6</sup> the development of an interdisciplinary innovation capstone course, and student innovation competitions, we aim to create a culture of innovation on campus. We offer a menu of innovation programs for our community partners as well, which are currently in a virtual format, but are typically held in community locations. We have also discovered the value of introducing innovation and entrepreneurship at an early age, so we created the “Young Sharks” and “Junior Sharks” curricula and pitch competitions for elementary and middle school students. The hope is that today’s efforts to create awareness of the importance of innovation will have long-term benefits for the economy.

### **Metrics for Success**

Common metrics to measure the success of economic development programs include job creation, job retention, and private investment, among others. Realizing that the impact of some programs is difficult to quantify, particularly in the short run, the EDA recently revised their reporting requirements for non-infrastructure projects. In addition to tracking traditional economic development metrics, this new reporting mechanism provides EDA-funded programs the opportunity to incorporate metrics based on the unique initiatives of each University Center, such as mentoring, coaching, training, commercialization support, events, and networking referrals. There is sometimes a disconnect between the projects and programs that are being implemented and the metrics that are used to evaluate the success of the work. The revised EDA reporting process mitigates this problem by providing University Centers the opportunity to report the broad impact of our programs.

### **Opportunities in Southeast and Mid-Michigan**

The economy of Southeast and Mid-Michigan has tremendous potential for creating a vibrant and well-developed innovation ecosystem. Indeed, in some parts of the region, much of the system is very well developed. However, other areas have been slower to adopt cutting-edge Industry 4.0 and advanced manufacturing technology, and as a result, economic shocks are often felt deeper and with longer recovery times than in other areas. The region has a rich and deep history of manufacturing and innovation, ranging from early roots in auto manufacturing to recent growth in health care technology, artificial intelligence, food processing, and cybersecurity, among others. In Michigan, we are also fortunate to have guidance and support from the Michigan Economic Development Corporation, which provides a range of services through their entrepreneurship and SmartZone programs. More concerted efforts to work collaboratively to create mutually beneficial synergies between campus and industry partners will help spur innovation in technology and lead to economic diversification, growth, and job creation.

A collaborative effort among private and public sector entities, UM-Flint’s EDA University Center programs are the culmination of many years of analysis, input sessions, and data collection surrounding the region’s holistic economic development and business ecosystem. The

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<sup>6</sup> [www.mwin.org](http://www.mwin.org)

focus of this research has been workforce development, the talent pipeline, and the need to diversify the regional economy by fostering an environment that is conducive to commercializing technology by building on regional assets and creating strong ties between campus and community, economic development, and business partners. A guiding principle in all conversations is the need to create strategies that value diversity and inclusion in every stage of the process. It is our view that sustainable economic development and well-functioning innovation ecosystems must include equity and shared prosperity as a priority. Working in tandem with other institutions of higher education, there is tremendous potential in mid-Michigan and Southeast Michigan to complement, leverage, and expand upon existing regional economic development efforts and assets, particularly as we train a workforce that meets the smart manufacturing needs of employers, leading to increased business attraction and job growth.

Colleges and universities play an integral role in the innovation ecosystem as anchors in local and regional economic development. In addition to EDA University Centers, offices of economic development, tech transfer, academic programs, and various institutes help to support economic and community development efforts.

Key to all of this is the willingness and ability to coordinate efforts, and to leverage each other's strengths. Particularly important is the collaboration between industry and university partners. UM-Flint's new College of Innovation and Technology is a prime example of leadership embracing the need for academia to respond to the needs of industry by developing programs and curricula in concert with industry partners. Regional public universities, such as the University of Michigan-Flint, play a critical role in the innovation talent pipeline, particularly since the majority of our graduates remain in the state of Michigan after graduation.

Building on key industries in the region, such as health services, manufacturing, and education, the region is fortunate to have an abundance of assets and potential for developing a skilled workforce and commercializing research that will enable manufacturers to adopt a broad range of Industry 4.0 technological advances. Universities will be able to strengthen their role in local and regional economic development by leveraging university expertise, networks, and physical spaces to address the needs of industry and community partners. For that process to yield results that lead to long-term economic growth, it is essential that we create new avenues for dialogue between universities, industry, and community partners, being mindful to give all potential ecosystem participants a voice in the planning process.

The EDA plays a key role in these efforts, from providing funding to facilitating coordination among programs and agencies. Continued coordination and collaboration with other federal agencies, such as the National Institute of Standards and Technology Manufacturing Extension Partnership, Manufacturing USA, and other science and technology focused Federal agencies will help to establish synergistic relationships that leverage the knowledge and experience of experts in countless areas of expertise. The University Center program helps to support this coordination by acting as neutral conveners and by providing technical support and assistance.

The economy of Southeast and Mid-Michigan is well positioned to continue to develop an innovation ecosystem that creates sustainable and inclusive economic growth. Over the last five years, EDA funding has provided the University of Michigan-Flint EDA University Center with an opportunity to support thousands of individuals and organizations, many of whom would have been left out of the system if it were not for our EDA University Center. Likewise, the EDA has contributed to the regional innovation ecosystem through support of the expansion of the Fast Forward Medical Innovation Hub and the Biomedical Seed Fund at the University of Michigan. As we all collectively think about best practices for building strong and inclusive regional innovation economies, it will be important to continue to keep in mind the need to provide entry points into the ecosystem so that opportunities are shared broadly and to encourage widespread participation in planning and implementing innovation initiatives. The solutions are not one size fits all. Some programs require larger amounts of funding, while other programs can show effectiveness at a smaller, but no less important scale.

Thank you again for the opportunity to testify today. I look forward to answering your questions.