ASSOCIATION OF PUBLIC & LAND-GRANT UNIVERSITIES

UNIVERSITY OF MARYLAND

CECE | INNOVATION AND ECONOMIC PROSPERITY AWARDS PROGRAM

IEP CATEGORY - INNOVATION

2025 CASE STUDY

University of Maryland, College Park

Quantum Startup Foundry: Accelerating Global Quantum Innovation

OVERVIEW OF THE QUANTAM STARTUP FOUNDRY

The Quantum Startup Foundry (QSF) at the University of Maryland (UMD) is a leading incubator and accelerator dedicated exclusively to support early-stage quantum and quantum-adjacent startups. QSF provides access to office space and quantum-specific infrastructure, and connects entrepreneurs and startups to Maryland quantum ecosystem, including guidance to access mentorship, research collaborations, business and legal expertise, non-dilutive and private capital funding, and key networking opportunities with government, industry, and academia.

Exterior of Quantum Startup Foundry co-working space at WeWork in the Discovery District.

With substantial investment in quantum research over the past 35 years, UMD emerged as a leading academic institution and quantum technology innovation hub well positioned to support commercialization of quantum technologies. Recognizing the vast economic and disruptive potential of quantum technologies, a regional collaborative —the Mid-Atlantic Quantum Alliance (MQA) — envisioned a dedicated incubator to translate this innovation into commercial impact.

Inspired by the MQA vision, the State of Maryland took legislative action that lead to allocating economic development funds towards quantum initiatives tat UMD and launching the QSF in 2021. Annual investment of up to $1 million was earmarked to attracting and supporting startups, co-locating in Prince George's County, home to UMD and its Discovery District innovation hub.

Through partnerships with MQA and UMD's research and entrepreneurship activities, QSF integrates startups into the region's robust quantum ecosystem. MQA provides a regional network of collaborators, while UMD connects founders to research labs, faculty expertise, and specialized university resources.

ACCELERATOR PROGRAMS

QSF's core programs — Pre-TraQtion and TraQtion — are tailored to startups at different stages of development:

Pre-TraQtion is designed for early-stage ventures seeking non-dilutive funding such as SBIR/STTR grants. Startups receive guidance on proposal development, back-office setup, customer discovery support via a quantum-specific I-Corps program, and introductions to researchers, partners, and program officers.

TraQtion is a market accelerator focused on connecting participants to MD quantum ecosystem, customer validation and research collaborations. Startups are introduced to stakeholders across academia, government, and industry to test their technology and identify product-market fit. Founders have opportunities to get trained on contracting, insurance, intellectual property, and other business fundamentals. The program provides workspace in the Discovery District and is especially valuable for international startups seeking a U.S. presence, also through MD Global Gateway grant program

QSF helps participating startups to not only refine their offerings and understand market needs, but also benefit from Maryland's broader entrepreneurial support systems.

CAPITAL CONNECTIONS AND ECOSYSTEM LEVERAGE

In addition to accelerator programming, QSF connects startups with investors and public-private funding opportunities through its Capital Connections initiative. Ventures engaging in business activities in Maryland may qualify for investment from the Discovery Fund and may be eligible for programs such as:

- TEDCO (Maryland's tech-focused investment organization)
- MIPS (Maryland Industrial Partnerships program)
- Build Our Future grants from the MD Department of Commerce
- MTIP (USM's subsidized student internship program for tech startups)
- MD Global Gateway grant program for foreign companies

QSF also hosted two Quantum Investment Summits, bringing together leaders from government, academia, industry, and investment community to showcase QSF-affiliated ventures and strengthen

ties across the quantum landscape. 30 startups gained exposure and connections through these events.

The Foundry also maintains strong relationships with regional and international economic development entities, including the Maryland Department of Commerce, Prince George's County Economic Development Corporation (PGCEDC), and Montgomery County Economic Development Corporation (MCEDC). These partnerships offer support with incentives, space, and other resources vital for startup growth.

Regional and international collaborations have also been a priority. QSF has developed relationships with quantum ecosystems across the U.S. and globally — such as Chicago's Duality accelerator, the Chattanooga Quantum Collaborative, South Carolina Quantum Associations, Roadrunner Venture Studios in New Mexico, Quantum Delta Netherlands, DistriQ in Québec, and others — helping its startups gain visibility, access opportunities, and participate in global events like Quantum World Congress and TechConnect.

MEASURING SUCCESS

To monitor its impact and optimize support, QSF employs a variety of tracking tools, including Salesforce, GoogleSheets, and Moneytryx. The Foundry maps its engagement with each venture across "touch points," from initial outreach through due diligence, pitch deck feedback, and program participation.

QSF tracks venture progress across key milestones such as grant awards, investments, team expansion, and technology development. It contributes metrics to UMD's university-wide effort to assess entrepreneurial activity tied to its research enterprise.

IMPACT AND MILESTONES

Since its inception, QSF has worked with over 40 quantum-related ventures, including Qubit by Qubit, a nonprofit inspiring underrepresented students to explore and learn quantum computing.

Current TraQtion affiliates include, among others:

- QC82, Error Corporation, and Nanofiber Quantum Technologies, all of which received MIPS grants to collaborate with UMD researchers.

- QC82 also secured a Build Our Future grant to develop a photonics characterization facility within QSF's AQCESSlab.
- NanoQT, BEIT, and QRC America were supported through the MD Department of Commerce's Global Gateway program, facilitating a "soft landing" for these international quantum startups.
- Five QSF startups have engaged with IonQ, a leading quantum computing company, through grants from the National QuantumLab (Q-Lab).

QSF itself received a Build Our Future grant to enhance its dual-use lab and office space, designed to support both startups' research and development activities and students' educational and entrepreneurial activities

ONGOING CHALLENGES

QSF's biggest challenge is rapidly growing demand for its services from quantum startups worldwide. Plans are underway to expand the team and facilities to increase capacity for serving quantum technology startups within the Discovery District to meet the demand and create a virtuous cycle of growing quantum entrepreneurship ecosystem in Maryland.

LINKS TO FURTHER INFORMATION

Supporting Information:

- Quantum Startup Foundry
- Mid-Atlantic Quantum Alliance
- Greater College Park Discovery District
- Quantum Investment Summit 2021

Articles:

- University of Maryland Launches Quantum Business Incubator
- Discovery Fund to Seed Local Innovation Ecosystem
- Moore Announces $1B 'Capital of Quantum' Initiative Centered at UMD
- UMD Creates Incubator for Quantum Startups

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 PROGRAM

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

The **IEP 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