

Ohio Institute for Quantum Computing
House Bill 96 Proponent Testimony
Senate Finance Committee
May 29, 2025

Chair Cirino, Vice Chair Chavez, Ranking Member Hicks-Hudson and members of the Senate Finance Committee, thank you for the opportunity to testify today on House Bill 96. I am Gregory P. Crawford, I have the honor and privilege of serving Ohio and her citizens as the 22nd President of Miami University. Joining me today to field questions is Joe Rich, Managing Partner of Cleveland Clinic Innovations and Ventures, representing our valued partner, Cleveland Clinic.

Thank you to Governor DeWine and the Ohio House of Representatives for supporting the vision of making Ohio the global epicenter of quantum computing medical research, workforce and talent development, and commercialization. The \$14 million of one-time funding in House Bill 96 will establish and fund the first two years of the Ohio Institute for Quantum Computing Research, Talent, and Commercialization (the Institute). Miami University and Cleveland Clinic are partnering to establish the Institute and will collectively invest an additional \$70 million in the Institute over the next ten years.

Quantum computing is poised to reshape the global economy, with projections estimating 250,000 new jobs by 2030 and 840,000 by 2035 (The Quantum Insider). These high-skill, high-wage roles—ranging from software development and systems integration to advanced R&D—represent a massive opportunity. Ohio can lead this transformation and secure a significant share of these jobs by staying at the forefront of quantum workforce development.

An investment in the Ohio Institute for Quantum Computing builds on the \$500 million already committed by the State of Ohio, JobsOhio, and Cleveland Clinic to launch the Cleveland Innovation District. While earlier investments emphasized infrastructure, the Institute will focus on the talent needed to power the Innovation District and drive Ohio's broader economic growth. We will invite our fellow higher education institutions, industry, and communities in Ohio to engage with the Institute as well.

At the heart of the Innovation District is the world's most powerful quantum computer dedicated to healthcare, developed through a groundbreaking partnership between Cleveland Clinic and IBM. Only five quantum systems globally match its power—four are owned by nations, and the fifth by IBM in New York. This rare and powerful infrastructure gives Ohio an unfair competitive edge in medical research, investment attraction, and talent recruitment.

As this technology advanced, so did the demand for a quantum-ready workforce. Miami University emerged as the Clinic's ideal partner, with an "Open for Business" motto, longstanding faculty expertise in quantum science, and one of the world's top 10 entrepreneurship programs. Working together, Cleveland Clinic and Miami created the first Bachelor of Science in Quantum Computing in Ohio, and one of the first in the world focused on operating and applying quantum systems—not building them.

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This degree, launching its inaugural class this fall, is housed in Miami's College of Engineering and Computing. It combines computer science, mathematics, and physics with specialized tracks in life sciences, neuroscience, bioinformatics, AI, cybersecurity, and finance. It represents a bold, public-private partnership that leverages Cleveland Clinic's global leadership in healthcare innovation and Miami University's excellence in undergraduate education. The Institute ensures Ohio is not only ready for the quantum economy—it's leading it.

This hands-on program trains students through co-ops and internships at Cleveland Clinic, where they will work alongside world-renowned scientists, gain entrepreneurial skills, and engage in cutting-edge medical research—all in Ohio.

According to the National Association of Colleges and Employers, 53% of interns are hired full time—a powerful mechanism to retain talent in-state. Cleveland Clinic researchers and clinicians will mentor students, collaborate with faculty, and serve in joint appointments, ensuring a pipeline of skilled professionals aligned to Ohio's workforce needs. These meaningful experiences will help reverse Ohio's brain drain and strengthen its innovation economy.

A key differentiator of the program is its integration of entrepreneurship. With quantum breakthroughs on the horizon, the Institute will support Ohio-born startups from the outset. Miami's entrepreneurship program—ranked top 10 globally for 17 consecutive years—will anchor this effort, ensuring quantum discoveries translate into Ohio companies and jobs.

Miami University will also establish a permanent presence in the Cleveland Innovation District, bringing faculty, students, and extended research capacity to Northeast Ohio. Focus areas include quantum computing, cybersecurity, entrepreneurship, nursing, gerontology, and supply chain management—fields critical to Ohio's growth.

The Institute also includes K–12 outreach and education, engaging students early in STEM, quantum, and medical research opportunities. Through urban and rural “bridges,” Miami will help ensure that students from every corner of the state have access to educational opportunities leading to high-demand, high-wage employment pathways.

Quantum computing is already transforming science, business, and healthcare. These systems solve problems traditional computers could take centuries to crack—delivering answers in real time. Ohio is leading this global shift. With the Institute, we ensure that our students, institutions, and industries are ready—not just to participate, but to lead.

Imagine a future where your doctor can analyze your genetics, lifestyle, environment, and occupation to deliver healthcare uniquely tailored to you. That level of personalized, precision medicine isn't widely possible today because our DNA is too large and complex for traditional computers to process efficiently. But quantum computing — with its ability to tackle problems of extraordinary complexity — is poised to change that, making what once seemed like science fiction a real and immediate possibility.

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Until recently, quantum computing was the realm of physicists exploring abstract concepts like superposition and entanglement. Today, it's a rapidly emerging technology that is breaking into mainstream science and society, capable of solving problems that would take classical computers decades, centuries, or longer. These machines don't just make existing processes faster — they make entirely new solutions possible.

In healthcare, quantum computing is expected to drive breakthroughs in early diagnosis, treatment customization, drug discovery, and genomics. It could empower researchers to detect diseases like cancer or Alzheimer's at their earliest stages and design therapies tailored to the biological profile of each individual. This represents a fundamental shift in medicine's capabilities and could extend lives and improve outcomes at a scale we've never seen before.

The impact doesn't stop at medicine. In manufacturing and industrial design, quantum computing can simulate complex systems under real-world conditions, optimize production workflows, and significantly accelerate the pace of innovation. These capabilities improve efficiency and reduce the time it takes to develop and launch new products, making industries more competitive.

Quantum computing is also emerging as a pivotal force in national security. With its potential to break current encryption standards, this technology creates both risk and opportunity. Nations are racing to develop quantum-resistant cryptography to protect their data and infrastructure. At the same time, quantum systems will enhance threat detection, intelligence analysis, and real-time decision-making in defense scenarios. They will also power the discovery of advanced materials for aircraft, armor, and communications systems, strengthening national defense from every angle.

This isn't a distant future — it's unfolding now. Quantum computers have already arrived, and Ohio is one of the few places in the world with the infrastructure and partnerships to lead. The opportunity before us is not just to participate in the quantum revolution but to shape it. With strategic investment in talent and research, Ohio can become the epicenter of the quantum economy — transforming science, medicine, industry, and security, and ensuring the benefits flow directly to our Ohio communities.

The race to lead in quantum computing is intensifying. States and nations are making bold investments to claim dominance in this transformative technology, and the stakes are especially high when it comes to national security and long-term economic competitiveness. While others are still building their quantum futures, Ohio already holds a powerful competitive advantage.

Take China, for example. The Chinese government recently announced a \$138 billion investment in emerging technologies — with a major focus on quantum computing. This effort includes a government-backed venture capital fund and builds on years of substantial national investment aimed at advancing practical quantum applications. Chinese universities and

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technology firms are actively developing quantum prototypes, signaling China's clear intent to lead the world in quantum capability.

Closer to home, Illinois has secured more than \$2.27 billion to establish a quantum computing hub focused on commercialization. Of that, \$1.18 billion is public funding, including \$280 million from the federal government, \$700 million from the State of Illinois, and \$200 million in incentive packages for PsiQuantum Corp. This support covers capital grants, workforce development, and a low-interest loan. PsiQuantum, the anchor tenant of Illinois's new quantum and microelectronics park on the former U.S. Steel site in Chicago, is contributing an additional \$1.09 billion to the effort.

Meanwhile, the University of Michigan has committed \$55 million to create a new quantum research institute. This initiative brings together faculty, industry partners, and government agencies to collaborate on cutting-edge quantum research and to train the next generation of quantum leaders.

But Ohio has something none of these efforts do: a fully operational quantum computer. While China, Illinois, and Michigan are spending billions to build capacity, Ohio already has it — here, now, in Cleveland.

At the heart of the Cleveland Innovation District is the most powerful quantum computer in the world dedicated to healthcare. This globally rare asset positions Ohio as a quantum leader today — not in some distant future.

Funding the Institute with one-time support is a strategic move to maintain and grow this lead. It ensures that the talent needed to power this technology is developed right here in Ohio — not imported after the fact. The Institute will become a magnet for researchers, entrepreneurs, and students, bringing them to Cleveland to live, learn, and innovate. Cleveland Clinic is already seeing growing interest from industry leaders who want hands-on experience with quantum computing. The Institute will accelerate this momentum by training the talent pipeline, expanding quantum research, and anchoring a community of experts in the state.

We are proud that Ohio is setting the national pace in quantum. The momentum is real, and it is accelerating. With continued investment, Ohio will not only hold its lead — it will define the next era of discovery.

As we look to the future, we are excited to deepen our collaboration with Cleveland Clinic researchers, who are working at the very edge of this transformative technology. Together, we will advance human health, elevate innovation, and help shape the dawn of the Quantum Age — right here in Ohio.