



February 26, 2026

Joint Legislative Budget Hearing  
Economic Development

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Good afternoon, Chairwoman Krueger, Chairman Pretlow, and distinguished members of the Legislature. Thank you for the opportunity to testify today at the Joint Budget Hearing on Economic Development. My name is Martin A. Schmidt, and I am President of Rensselaer Polytechnic Institute.

For two centuries, RPI has partnered with New York State to translate research and innovation into economic opportunity. I appreciate the opportunity to share how the FY27 Executive Budget, particularly the proposed investment in quantum technology hubs, can further strengthen that partnership and deliver lasting economic benefits to New Yorkers.

RPI brings deep and nationally recognized expertise to the advancement of quantum computing technologies. We were the first university in the world to host an on-campus IBM quantum computer, providing students, faculty, and industry partners with direct access to cutting-edge quantum computing hardware. Building on this foundation, RPI has developed interdisciplinary strengths in research and education across quantum computing, materials science, and chip design, supported by active partnerships with other New York State educational institutions, multiple Counties in the state, leading technology companies and federal research agencies. These RPI-driven partnerships have created a unique combination of infrastructure, talent, and industry engagement that positions New York State as a proven economic hub for translating the application of quantum computing into economic development and for training the quantum workforce of the future.

Governor Hochul's Executive Budget includes a proposed \$60 million investment in Quantum Technology Commercialization Hubs. This initiative appropriately recognizes both the transformative potential of quantum computing and New York State's opportunity to lead in this emerging field. Strategic investments of this kind are essential to accelerating research commercialization, strengthening workforce pipelines, and positioning New York as a national center for next-generation computing. Research universities play a critical role in moving discoveries from the laboratory to the marketplace, and RPI strongly supports the State's commitment to building a collaborative quantum ecosystem that further connects academia, industry, and government.

To maximize the return on this investment, New York must focus on the application of Quantum Computing by developing new algorithms for real-world applications. RPI is a global leader in "quantum-centric supercomputing," or QCSC, an approach that uses today's high-performance supercomputing applications as an on-ramp for developing the quantum algorithms of tomorrow. We have established this leadership through strategic partnerships in New York State. Algorithms and applications are the bridge between quantum capability and economic impact. They enable industry, government, and researchers to translate quantum performance into solutions for energy, health care, finance, logistics, and national security.



Targeted support for algorithm development, application testbeds, and industry-facing use cases will ensure that New York's quantum investments deliver measurable value to the State's economy. This approach also aligns closely with federal priorities, including those outlined in the recently introduced National Quantum Initiative Act. Strategic state investment in quantum-centric supercomputing will attract federal funding and attention. New York already has the essential components to become a nationally competitive hub for quantum computing research, commercialization, and workforce development, and timely state and federal investment can ensure that leadership is realized here.

The timing of this investment is critical. Quantum computers are rapidly moving from foundational research toward demonstrated commercial advantage. IBM has publicly stated that it expects to achieve at least one clear example of quantum advantage before the end of 2026, an inflection point at which quantum computers begin to outperform classical computing for real-world problems. Once this threshold is crossed, adoption and commercial deployment are expected to accelerate rapidly. As with artificial intelligence, quantum will arrive quickly, and those who are prepared will capture the economic development benefits and job creation that follow. New York should seize this quantum 'ChatGPT moment' opportunity for its citizens.

Quantum computers are also converging with artificial intelligence and advanced semiconductor development, reinforcing and extending New York's existing leadership in these areas. Progress in quantum computing depends on advances in chip design, materials, fabrication, and cryogenic systems, while AI increasingly relies on quantum-enabled approaches for optimization, materials discovery, and complex modeling. States that align these capabilities now will capture disproportionate advantages in talent attraction, private investment, and commercialization. Without timely in-state access to shared quantum computing hardware, New York risks ceding leadership in fields that directly complement its prior investments in semiconductors, AI, and advanced manufacturing.

For this reason, shared quantum computing hardware should be a foundational element of the State's investment strategy. Hardware access enables algorithm development, application testing, and workforce training. Without in-state quantum computer access, researchers, students, and companies cannot experiment, develop software, or train talent at the pace required to remain competitive.

This urgency is underscored by the broader pace of change in advanced computing. As Curtis Priem, co-founder of NVIDIA, has observed in discussions with RPI, overall computing capability is now advancing at an unprecedented rate, effectively doubling every 19 hours when accelerated computing, AI, and specialized architectures are considered together. When quantum computing begins to deliver demonstrated advantage within this environment, growth will not be linear; it will be explosive. Technology cycles that once unfolded over decades will compress into months, and states that delay investment risk falling irreversibly behind.

Other states are already acting decisively. Illinois has launched the Illinois Quantum and Microelectronics Park with significant public investment to attract industry, federal funding, and global talent. Maryland has committed substantial resources through its Capital of Quantum Initiative. Colorado, New Mexico, and Wyoming have formed the Elevate Quantum consortium, a multi-state effort to establish a nationally



competitive quantum ecosystem. These initiatives reflect a clear reality: states are moving now to secure leadership before quantum advantage fully arrives.

This proposed investment should be viewed as a capital strategy, not a discretionary expense. Early public investments serve as anchors that enable private research and development, expand the tax base, and generate long-term state revenues through job creation and company formation. Quantum hubs create durable assets, shared infrastructure, workforce pipelines, and industry partnerships that persist long after initial appropriations are spent.

While quantum computers can seem abstract, their impacts are tangible and increasingly near-term. Quantum Computing-enabled advances are already accelerating drug discovery and medical research, improving energy efficiency and grid reliability, strengthening cybersecurity, and optimizing transportation and supply chains. These outcomes translate directly into lower health care costs, more reliable infrastructure, enhanced public safety, and greater economic resilience.

Equally important, quantum computing investment will create stable, well-paying jobs, not only for researchers, but for technicians, engineers, software developers, manufacturing workers, and skilled trades. This investment helps ensure that the jobs of the future are available here in New York, allowing students and workers to build careers without leaving the state. It also enables alignment across the education and workforce pipeline, from community colleges through research universities.

Workforce readiness is therefore essential. New York must invest now so that its workforce is prepared to fully utilize quantum systems as they come online. Hands-on experience with quantum computers is critical for developing the engineers, programmers, technicians, and domain experts who will operate and apply these technologies. Early investment ensures that New York is ready to deploy quantum computers immediately, rather than facing a skills gap at a critical moment.

In closing, I thank the Legislature for its continued commitment to strengthening New York's innovation economy. Quantum computers are entering a phase of early market adoption, with commercial demand accelerating across multiple industries. Independent analyses suggest that quantum computing could unlock hundreds of billions of dollars in global economic value over the coming decade. The question is not whether this transition will occur, but where its benefits will accrue.

By acting now, New York can secure a leadership position that builds on its investments in semiconductors and artificial intelligence, attracts federal and private capital, and delivers enduring economic benefits to communities across the State. RPI looks forward to continuing our partnership with government and industry to ensure that innovation in New York leads to opportunity for all. Thank you for your time and consideration, and I would be pleased to answer any questions.