Joint Legislative Budget Hearing on Economic Development / Arts
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Introduction:

Thank you for the opportunity to provide written testimony for the Joint Legislative Budget Hearing on Economic Development / Arts.

With more than 39,500 total employees at the University of Rochester and its affiliates, the University is the largest private employer and largest healthcare provider in Upstate New York. Funding for state funded university-based economic development and research programs is having a tremendous impact on our regional economy and I would like to highlight a few key examples but also call attention to a glaring omission in the 2026-27 executive budget proposal that could jeopardize efforts for the Finger Lakes region to compete for a potential $160 million federal grant.

Quantum Technology Commercialization Hubs:

We are strongly supportive of the Executive Budget's proposal to provide $60 million to establish four additional Quantum Technology Commercialization Hubs across the state. The University of Rochester has a very rich history in quantum research, including the birthplace of quantum optics, but our strengths and capabilities extend far beyond that, and we are focused on the grand challenges in quantum information science. Our assets, including our technology capabilities, make us ideally positioned to be one of these four regional anchors for quantum innovation and high-tech start-ups.

Our Center for Coherence and Quantum Science (CCQS) is a collaboration of researchers from a range of disciplines across the University of Rochester. Moreover, with our involvement in the National Quantum Initiative (NQI) and creation of US Department of Energy quantum hubs across the country, the University of Rochester researchers have been working with Stony Brook University and Brookhaven National Lab for several years to develop a NYS quantum network and establish the University of Rochester as an upstate node. The goal would be to also connect with Air Force Research Lab in Rome and New York University establishing New York State as a leader in this field.

The University of Rochester, working with RIT, have already established the Rochester Quantum Network (RoQNET), a quantum communications testbed connecting our campuses via 11 miles of optical fiber, and just received $2 million from Sen. Schumer, Sen. Gillibrand and Rep. Morelle to strengthen and further develop this experimental quantum network. Sending communications using individual particles of light offers

unprecedented levels of security, making them impregnable from being cloned or intercepted without detection and preventing bad actors from accessing sensitive data. Harnessing quantum entanglement could eventually lead to sophisticated networks of quantum computers or advanced new methods to improve the resolution of space telescopes. While there are other experimental quantum networks across the world, RoQNET offers several distinct advantages, including the ability to transmit photons over normal fiber-optic lines like those that already exist across the globe. RoQNET is further distinguished from other quantum networks because of URochester's expertise in quantum memory hardware and RIT's ability to create quantum photonic integrated-circuit light source.

When you couple this with our technology commercialization capabilities and strengths through our tech transfer office (UR Ventures) and our affiliate, NextCorps, the Rochester-Finger Lakes only state and federally designated business incubator that operates ESD's highly successful Luminate business accelerator program which has already been working with several quantum start-up companies, Rochester should be one of the four Quantum Technology Commercialization Hubs. Establishing Rochester as one of these four hubs will leverage additional private and federal investments, strengthen national security, spur economic development and innovation, and position New York to be a global leader in quantum communication and networking.

Luminate:

We are deeply concerned that the Executive Budget Proposal does not include funding to continue Luminate NY, the world's largest business accelerator and investment for startups working on emerging technologies enabled by optics, photonics, and imaging (OPI). Without additional support in the state budget, funding for Luminate will run out in 2026 and there is no funding in the budget for Luminate to begin the marketing and recruiting process this fall for another cohort.

The omission of funding for Luminate could also jeopardize the STELLAR (Science, Technology and Engineering of Laser and Laser Applications Research) application for a National Science Foundation (NSF) Regional Innovation Engine. Luminate is a critical component of the STELLAR proposal, led by URochester, which is now an NSF finalist for a $160 million, 10-year grant. This effort seeks to leverage our region's strengths in optics, photonics, imaging, and lasers and helps position it as a hub for laser innovation, talent, and technologies to enhance our national competitiveness and local economic vitality. In fact, on February 26, the same day as this budget hearing, NSF will be conducting a site visit in Rochester as part of their review. Our application is one of only 15 finalists nationally and the only one from NYS.

Luminate was established in 2017, with $10 million in funding over 2 years from the Upstate Revitalization Initiative (URI). Soon after, it received an additional $15 million

from the URI to extend the program for 3 more years. Round 5 began in April 2022, but without the additional funding in the budget, it would have ended.

The 2022-23 state budget created a $75 million Innovation Venture Competition Program to fund Luminate and some of the other programs, like 43 North, Grow-NY, others. However, that fund is scheduled to expire next year.

Luminate has been a great success and arguably the most successful startup accelerator in the Innovation Venture Competition Program. It is recognized worldwide and other countries are looking replicate its success. More than 1,000 companies from 64 countries have applied to Luminate to tap into the unmatched OPI resources located in the Rochester-Finger Lakes and Southern Tier regions to help scale their technologies and access a soft landing into the U.S. Over 60% of the international graduates of the program have moved their companies to New York State.

Based at and managed by NextCorps, an affiliate of the University of Rochester, in the heart of Rochester's Downtown Innovation Zone, Luminate has invested $21 million in 85 startups, and those companies have spent $21.6 million on more than 140 projects with New York design, manufacturing, and supply chain companies. These efforts have resulted in 210 new direct hires and supported or retained an estimated 700 jobs. They have also fueled the region's innovation economy and downtown revitalization.

Companies in the portfolio have raised an additional $437 million, providing an estimated 14:1 investment ratio. While the program's returns on investment are anticipated to further boost New York's economy, it will also strengthen its position in critical tech sectors tied to national security and sustainability.

Luminate has also focused on integrated photonics companies at the intersection of semiconductors and photonics, fostering valuable industry connections. With the growing demand for semiconductor innovations, NY's partnership and investment in Micron, and limited support for startups in this sector, Luminate presents a unique opportunity to bridge this gap and bolster our state's economy.

For these reasons, we strongly urge the State Legislature to include funding in the 2026-2027 state budget to fully fund Luminate NY for another 5 years at $5 million annually. With your continued support, Luminate will continue to foster innovation, drive economic growth, foster job creation, and strengthen collaborations across academia and industry.

STELLAR (Science, Technology and Engineering of Laser and Laser Applications Research)

The NSF Regional Innovation Engines program was created in the landmark CHIPs and SCIENCE Act passed in 2022 To address regional imbalances created by innovation

economy. Only five innovation hubs—Boston, San Francisco, San Jose, Seattle, and San Diego—accounted for more than 90% of the nation's innovation sector growth from 2005 to 2017. Meanwhile, 191 of 382 U.S. metro areas have lost innovation jobs in the same period of time. These regions are losing out on productivity growth that plays a vital role in creating jobs and raising living standards, which are critically important as we recover from the economic damage caused by the current global pandemic. The Rochester-Finger Lakes region has been identified by Brookings and the Information Technology & Innovation Foundation as one of the top growth opportunities.

NSF Engines program represents one of the single largest broad investments in place-based research and development in the nation's history – uniquely placing science and technology leadership as the central driver to accelerate transformative innovation-sector scale-up and to improve that nation's competitiveness in key technology areas.

Each Engine can be funded for up to 10 years and total of $160 million, subject to periodic review of performance. This is intended to support the development of regional coalitions of researchers, institutions and companies to conduct research and development that engages people in the process of creating solutions with economic and societal impacts.

In 2023, the University led STELLAR (Science, Technology and Engineering of Laser and Laser Applications Research) project was one of 44 teams awarded an NSF Engines Development Award. These grants provided $1 million for a two-year planning process to begin assembling institutional, industrial, and business partners to establish an innovation and economic hub built around laser science and technologies.

In 2025, STELLAR submitted a proposal for a full NSF Engines proposal and in September was named one of 15 finalists nationwide, and the only one in New York State. Awardees are expected to be announced later this year.

The STELLAR mission is to create and grow an ecosystem in the Rochester, NY region that advances the science, technology, and engineering of lasers to provide US-based sources of next-generation lasers for scientific, industrial, manufacturing, energy, biomedical, and national security applications. If awarded, STELLAR will achieve:

- Increase employee training and retention for the ROC/FLX laser ecosystem
- Improvement in performance and cost for critical laser systems and components at scale for manufacturing capacity
- Increase in regional investments for the translation of technologies into commercialization

In addition to Luminate and New York State, STELLAR partners include RIT, Monroe Community College, Greater Rochester Enterprise, AIM Photonics, American Center for Optics Manufacturing, Rochester Museum and Science Center, NY Photonics, and

numerous industry partners from large firms like Corning and L3Harrs to some of the more than 120 small and medium sized optics, photonics, imaging and laser companies that exist throughout the Rochester, Finger-Lakes and Southern Tier regions.

Centers for Advanced Technology (CATs) and Centers of Excellence (COEs):

The New York State Centers for Advanced Technology (CATs) and Centers of Excellence (COEs) are based at colleges and universities across the state. These Centers provide businesses with valuable expertise, access to high-tech equipment and workforce development.

In the 2024 reports by Empire State Development (ESD), the CATs and COEs helped create and retain 1,356 jobs and generate $904,844,005 in economic impact, with a ROI greater than 31:1 in the 2022-2023 reporting year (the most recent data currently available).

Despite this success, the Executive Budget proposals have continued to cut funding for the Centers. We are grateful that the State Legislature was able to restore the governor's 12% cut and level-fund the CATs and COEs at $1 million per Center in previous budgets and we would certainly welcome additional funding for the CATs and COEs to help:

- Increase the number of company collaborations each Center can support and expand industry outreach and engagement activities
- Grow the network of subject-matter experts and technical infrastructure accessible to private industry
- Strengthen each Center's operations & technological capabilities
- Boost regional economic development efforts by commercializing new products and technologies at a faster pace, attracting new investments, and enhancing workforce training

Center of Excellence in RNA Research & Therapeutics (CERRT):

Unfortunately, the Executive Budget Proposal again eliminates all funding for the Center of Excellence in RNA Research & Therapeutics (CERRT) and we urge the State Legislature to restore it and consider providing an increase to $500,000 annually to support its growth and efforts.

We are grateful that the State Legislature designated a new Center of Excellence in the 2024-2025 state budget and provided $250,000 in annual funding for its first year and again in the 2025-2026 state budget. CERRT is a partnership between the University of Albany and the University of Rochester focused on developing RNA-based therapies and training the next generation of New York's biotechnology workforce. Home to renowned scientists with decades of experience and millions of dollars in external

funding for RNA-based research, the two institutions will work together to promote economic growth through continued scientific discovery and partnership with industry.

This past year, the URochester branch of CERRT focused on supporting Scriptr Therapeutics, a startup company co-founded in 2019 by Dr. Douglas Anderson. CERRT contributed funds to support 3 lab positions, including two PhD staff scientists, allowing Scriptr to expand its research on large-gene therapies and new technology applications, making them more competitive in the biotech space. CERRT is also working with large New York biotech companies like Regeneron, Pfizer, and Curia to develop new therapeutics and to establish a pipeline of trained workers.

As part of the Empire AI Consortium, researchers at URochester are working with colleagues at the University of Albany to use computer vision and AI to analyze the recorded movements of patients with neuromuscular diseases like myotonic dystrophy (DM), the most common form of adult-onset muscular dystrophy. Researchers hope to use the Empire AI system to develop innovative treatments for neurodegenerative diseases like DM, amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig's disease, and spinocerebellar ataxias. This is a great example of the collaboration not just between public and private institutions, but also how the Centers of Excellence—CERRT and the Center of Excellence in Data Science & AI at the University of Rochester—are working to advance statewide initiatives like Empire AI and build on the talent and resources at the worldclass universities in New York State.

Center for Emerging & Innovative Sciences (CEIS):

Unfortunately, the Executive Budget Proposal again cuts funding for all 15 Centers for Advanced Technology (CATs) and we urge the State Legislature to restore funding to $1 million for each of the 15 CATs.

The University’s Center for Emerging & Innovative Sciences (CEIS) has been a catalyst for growth in optics, photonics, and imaging through industry-university collaboration and technology transfer for more than 20 years. As one of only 15 CATs statewide, CEIS applies world-class research toward the commercialization of technologies and products to help meet industry needs. CEIS has led or supported efforts to secure all four of the federal government’s advanced manufacturing programs focused on optics, photonics, and imaging for the Finger Lakes, including AIM Photonics. In 2023-2024, CEIS generated $27.4 million in direct economic impact and created or retained at least 22 jobs at 13 companies.

Rochester COE in Data Science & AI:

Like with the CATs, the Executive Budget Proposal unfortunately cuts funding for 14 of the 15 Centers of Excellence (COEs) again and we urge the State Legislature to restore funding for these Centers.

New York State's 15 Centers of Excellence (COE) are partnering with industry to transform research and technology capabilities into commercial applications. In 2022-2023, the Rochester COE in Data Science & AI created or retained at least 33 jobs, generated $22.5 million in economic impact.

The COE's successful paid internship program, aimed at strengthening the AI workforce in New Yok State and invigorating the state's technology startup and small business ecosystem, is in its fourth year. Last year, a partnering company, Buffalo Solar, reported $1 million of economic impact based on the work of interns recruited through this program. The program is in high demand among students and companies across New York State.

Laboratory for Laser Energetics (LLE):

We are grateful for the continued state support for the University's Laboratory for Laser Energetics in the 2026-27 Executive Budget. Thanks to strong and consistent investment from New York State since 1983 through NYSERDA and ESD, the Laboratory for Laser Energetics (LLE) at the University of Rochester has been able to leverage substantial federal government support. LLE currently receives approximately $120 million in federal support each year. LLE has attracted about $3 billion in Federal support to NYS since its inception.

The University of Rochester is home to the largest, most powerful and capable lasers housed at any academic institution in the world and is the largest university-based program funded by the U.S. Department of Energy (DOE). This makes it a unique national resource known worldwide as the leading academic institution advancing laser technologies, fusion, and high-energy-density science at scale

LLE employs 450 scientists, engineers, and staff, paying $66 million in income annually. Additionally, about 200 students and approximately 500 external scientists from across the country travel to New York to utilize LLE's facilities for their education and research. This includes a 25-year partnership with SUNY Geneseo that has resulted in more than $7 million in direct funding to Geneseo for student support, research, and new equipment.

Over the last decade, LLE has made $57.6 million in purchases from over 1000 vendors across New York State. The spending of the LLE and its employees contributes to an additional 550 spillover jobs for a total impact of about 1000 jobs across Upstate New York, $66 million of income to workers, and $3.7 million in revenue to state and local governments.

Conclusion:

Thank you again for the opportunity to provide testimony and the leadership of this committee. The programs and examples I have shared highlight the state's vital role in supporting strategic, university-based economic development that is helping significantly benefit the state. These programs all have a multiplier effect and demonstrate how higher education is working to grow businesses of all sizes and all sectors in New York. While the State's financial outlook is challenging, the University of Rochester strongly encourages strong, sustained investment in university-based innovation and economic development programs. With the state's continued support and partnership, we can do more to harness innovation and discoveries into commercially viable technologies and companies.

About the University of Rochester:

Thanks to state support, the University of Rochester is the largest private employer in Upstate New York and one of the largest private sector employers in the state. According to an independent analysis, the University and its affiliates directly or indirectly supports 66,700 jobs, representing 1 in every 126 jobs throughout New York State, and generates an approximate $322 million annually in tax revenues for the State of New York.

The University of Rochester is one of America's leading research universities, regularly receiving more than $400 million annually in sponsored research funding. Our clinical care enterprise, UR Medicine, is the largest health system in Upstate New York and includes hospitals across the Finger Lakes and Southern Tier.

The University of Rochester is a national leader in translating discoveries into new technologies, applications, and companies that treat and cure disease, improve national security, and help our nation move toward a sustainable clean energy future. Since 2005, over 50 startup companies were formed to license and commercialize technology developed at the University of Rochester.