Rensselaer Polytechnic Institute Begins Installation of First-Ever IBM Quantum System One on a University Campus

Groundbreaking celebrated new educational, workforce training, and research opportunities in quantum once system is installed in January 2024

TROY, NEW YORK, UNITED STATES, October 13, 2023 /EINPresswire.com/ -- On October 13, 2023, Rensselaer Polytechnic Institute (RPI) and IBM held a ceremonial groundbreaking to celebrate the first-ever deployment of an IBM Quantum System One on a university campus. The event, held at the RPI's Curtis R. Priem Experimental Media and Performing Arts Center (EMPAC), featured a grand reveal of the IBM Quantum System One chandelier, the intricately wired golden structure containing the quantum processor chip.

From left, John E. Kelly III, RPI Board of Trustees chair and retired IBM executive vice president, Curtis R. Priem, co-founder of NVIDIA and RPI Board of Trustees vice chair, Darío Gil, senior vice president and director of IBM Research, and Martin A. Sc

"We are celebrating a new era at RPI," said RPI President Marty A. Schmidt '81, Ph.D. "Today's groundbreaking is an enormous win, not just for RPI, but for the region. It is part of a surge of regional strength in all aspects of computing. Today we are headed even deeper into the future. New York's Hudson River Valley has the potential to become Quantum Valley."

Visit this link for a downloadable video and photos.

Schmidt; Curtis R. Priem '82, vice chair of RPI's Board of Trustees; Darío Gil, Ph.D., Senior Vice President and Director of IBM Research; and John E. Kelly, '78G, '80 Ph.D., D.H.L. (Hon.), Chair of the Rensselaer Board of Trustees, were all featured speakers at the event. Buck Bobbin, represented the Office of U.S. Senator Kirsten Gillibrand and Congressman Paul D. Tonko (NY-20) provided remarks via video. Students, alumni, faculty, staff, and community members crowded

the theater.

Priem, who is helping to fund the $150 million total project, was presented with the Philanthropic Pioneer Award for his contributions to technological innovation and RPI students. In his comments, Priem shared how he and Kelly started the conversation about RPI housing an IBM quantum computer at a board retreat. "I've never seen a project go this fast. I've never seen a project this big come together," said Priem. "RPI and IBM are going to find all of the new applications for quantum computers. Between the two of us, we are going to be rocking and rolling on this! This is another one of those things where you get it started, and those that who more capable than you take over and go conquer the world."

Martin A. Schmidt, president of Rensselaer Polytechnic Institute gives his remarks as RPI will become the first university in the world to house an IBM Quantum System One computer, Friday, Oct. 13, 2023 in Troy, N.Y. (Hans Pennink/AP Images for Rensselaer

The IBM Quantum System One to be deployed at RPI will be powered by the 127-qubit IBM Quantum Eagle processor, with which the company has recently demonstrated the capability to perform utility-scale calculations. IBM defines utility-scale as the point at which quantum computers could serve as scientific tools to explore a new scale of problems that remain intractable for classical methods.

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"Today is a monumental day for RPI, IBM, and for the field of quantum computing," said Gil. "Housing an IBM Quantum System One at a university, especially one as rich in creativity and scientific knowledge as RPI, will serve as a cornerstone of pushing the boundaries of quantum computing to the next level. Now, with a quantum computer, RPI will be at the forefront of ushering in a completely new paradigm of computing that offers profound possibilities for the exploration of a range of previously intractable problems across areas such as materials design, sustainability, pharmaceutical development, healthcare and much more."

With an expected completion date of January 2024, the intensive project is already underway,

with preparations being made at RPI's Voorhees Computing Center (VCC) so it can house the roughly five-ton machine that has stringent construction, temperature, and security requirements. The IBM Quantum System One is as futuristic in its appearance as it is in its technical capabilities. It adds to RPI's storied history in advanced technology on the cusp of its bicentennial in 2024.

"As we prepare to celebrate two hundred years at the forefront of STEM research and education, this demonstrates our commitment to leadership and innovation into our third century and beyond," said Kelly. "When this system is up and running, researchers at RPI and throughout the region will be able to model problems that address the most urgent challenges facing the world today, leading to advancements in health, sustainability, artificial intelligence, and national security."

Critical components of the RPI-IBM collaboration include quantum education, quantum workforce development, and quantum research. New curriculum in quantum is being developed, along with new educational materials, seminar offerings, a certificate program, and special events. The IBM Quantum System One will be part of RPI's new Curtis Priem Quantum Constellation, a faculty endowed center for collaborative research, which will prioritize the hiring
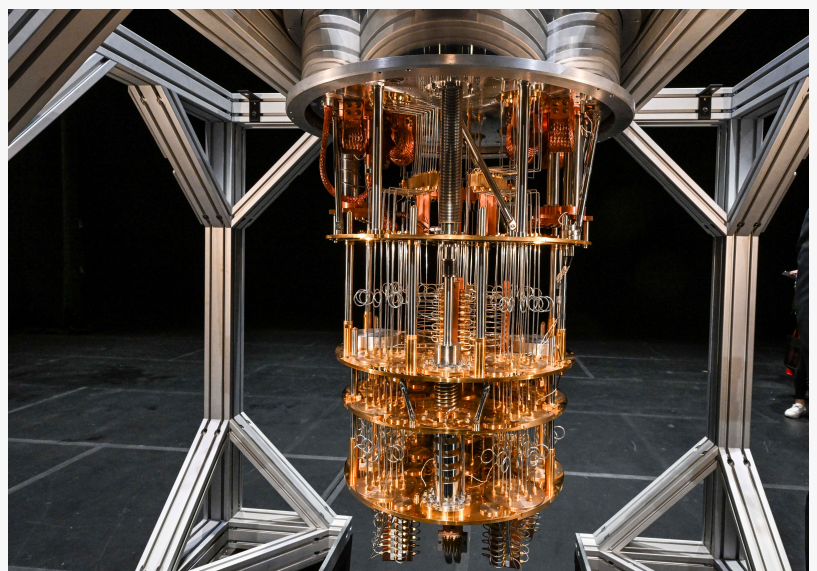

Curtis Priem, co-founder of NVIDIA and RPI Board of Trustees vice chair talks with reporters about the IBM Quantum System One during a groundbreaking ceremony Friday, Oct. 13, 2023 in Troy, N.Y. (Hans Pennink/AP Images for Rensselaer Polytechnic Institute

Darío Gil, senior vice president and director of IBM Research gives his remarks as RPI will become the first university in the world to house an IBM Quantum System One computer, Friday, Oct. 13, 2023 in Troy, N.Y. (Hans Pennink/AP Images for Rensselaer Po

of additional faculty leaders who will leverage the quantum computing system. IBM will provide research guidance and resources. Regional partners in academia and industry will also have access to this exceptional research tool.

The excitement is palpable on RPI's campus. A Quantum Computing Club has already formed. Some students are already accessing quantum technology through the cloud. Osama Raisudden, a doctoral student in aerospace engineering, uses the technology to simulate engineering problems that would be too time intensive and expensive on classical computers. "When I chose to pursue quantum computing as my Ph.D. research topic at RPI, I had no idea that the one-of-a-kind resource of an IBM Quantum System One on campus would one day be available to me," said Raisuddin. "Not only will it be beneficial for my research, but it will give me a leg up in my career because I will have

The IBM Quantum System One quantum computing system is seen during a groundbreaking ceremony at Rensselaer Polytechnic Institute on Friday, Oct. 13, 2023 in Troy, N.Y. (Hans Pennink/AP Images for Rensselaer Polytechnic Institute)

exceptional access to quantum education, training, and research groups at RPI."

About Rensselaer Polytechnic Institute:
Founded in 1824, Rensselaer Polytechnic Institute is America's first technological research university. Rensselaer encompasses five schools, over 30 research centers, more than 145 academic programs including 25 new programs, and a dynamic community made up of over 6,800 students and 110,000 living alumni. Rensselaer faculty and alumni include upward of 155 National Academy members, six members of the National Inventors Hall of Fame, six National Medal of Technology winners, five National Medal of Science winners, and a Nobel Prize winner in Physics. With nearly 200 years of experience advancing scientific and technological knowledge, Rensselaer remains focused on addressing global challenges with a spirit of ingenuity and collaboration. www.rpi.edu.

About IBM:
IBM is a leading provider of global hybrid cloud and AI, and consulting expertise. We help clients in more than 175 countries capitalize on insights from their data, streamline business processes, reduce costs and gain the competitive edge in their industries. More than 4,000 government and corporate entities in critical infrastructure areas such as financial services, telecommunications and healthcare rely on IBM's hybrid cloud platform and Red Hat OpenShift to affect their digital transformations quickly, efficiently and securely. IBM's breakthrough innovations in AI, quantum computing, industry-specific cloud solutions and consulting deliver open and flexible options to our clients. All of this is backed by IBM's legendary commitment to trust, transparency, responsibility, inclusivity and service. Visit www.ibm.com for more information.

Contact:
RPI
Katie Malatino
Sr. Communications Specialist
malatk@rpi.edu
838-240-5691

Samantha Murray
Sr. Communications Specialist
murras7@rpi.edu
518-276-6504

IBM
Willa Hahn
willa.hahn@ibm.com
540-686-6587

Katie Malatino
Rensselaer Polytechnic Institute
+1 518-276-2146
email us here
Visit us on social media:
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