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Rochester Institute of Technology

December 7, 2018 by [Susan Gawlowicz](#) [Follow @SGawlowicz](#)

RIT hosts quantum workshop Jan. 23-25

The Photonics for Quantum Workshop will address pending national initiative

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An international conference on quantum science and technology is expected to draw hundreds of leaders in the field to Rochester Institute of Technology in January in response to a congressional imperative to accelerate quantum research.

The Photonics for Quantum Workshop will be held from 9 a.m. to 5 p.m. Jan. 23-25 in Ingle Auditorium in the Student Alumni Union on the RIT campus and will feature invited talks and poster presentations by scientists and engineers from the National Science Foundation, NASA, AIM Photonics, national laboratories, industry and academia. Topics will focus on quantum technology development in five main applications—computing, communication, imaging, sensing and clocks. Additional talks and a panel discussion will address the need for a quantum workforce pipeline that will create new job categories, such as “quantum engineer.”

Recent advances in quantum science have leapfrogged existing capabilities in handling complex computational problems, providing communication security, and in enhancing navigation, imaging and other sensing technologies.

“Quantum physics led to transformative technologies in the last century—transistors, microelectronics, LEDs, lasers, nuclear power, digital cameras and magnetic resonance imaging,” said Don Figer, conference organizer and director of RIT’s [Future Photon Initiative](#), one of the university’s signature research areas. “The new Quantum 2.0 technologies can exploit fundamental properties of individual photons, trapped ions and superconducting circuits. The Photonics for Quantum workshop focuses on using photons in Quantum 2.0 technologies.”

The U.S. House of Representatives, in September, passed the \$1.3 billion [National Quantum Initiative Act](#) to maintain U.S. scientific and technological leadership. Now before the Senate, the legislation would create a 10-year program to advance quantum development and technological applications and develop the quantum standards and measures for global use.

Quantum mechanics is a branch of physics that manipulates the smallest amount of energy at the subatomic level. Different rules govern matter at this scale, and scientists are using the strange, unintuitive properties created by quantum superposition and entanglement. Countries are racing to harness quantum capabilities, secure their networks and lead in emerging fields like artificial intelligence and synthetic biology.

In addition to RIT, the Photonics for Quantum Workshop is sponsored by ID Quantique, Princeton Instruments and TOPTICA Photonics Inc. To register, go to <https://www.rit.edu/fpi/photonics-quantum-pfq-workshop>.

For further information about the workshop, contact Robyn Rosechandler at admind@cfid.rit.edu.