



**INNOVARE**  
ADVANCEMENT CENTER

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## **Innovare Advancement Center Announces 18 Teams Qualified for \$1M in Basic Research Funding Awards from the ‘Million Dollar International Quantum U Tech Accelerator’**

***Event Marked the Kickoff of Innovare Advancement Center and Featured a Keynote Discussion with Astrophysicist Dr. Neil deGrasse Tyson and U.S. Air Force and U.S. Space Force Acquisition Executive Dr. Will Roper***

Rome, NY – [Innovare Advancement Center](#), a partnership between the [Air Force Research Laboratory Information Directorate](#) (AFRL/RI), [New York State, Oneida County](#) (OC), New York, the [City of Rome](#), the [Griffiss Institute](#) (GI), [NYSTEC](#), and [The State University of New York](#) (SUNY), announces the 18 research teams from around the world who have qualified for awards, for their potentially game-changing quantum research and innovations as part of the live, virtual “Million Dollar International Quantum U Tech Accelerator.” This global engagement took place September 1-3, 2020, and boasted cross-department support from the [Air Force Office of Scientific Research](#) (AFOSR) and [Office of Naval Research](#) (ONR).

Over one thousand top-tier researchers, members of industry, higher education leaders, and members of the public from around the world, virtually attended this first-of-its-kind event centered around a \$1,000,000 quantum-focused pitch competition for university researchers. Notably, viewers took part and learned more about how advanced research, especially related to quantum, can lead to incredible technological progress, during the keynote, “Quantum Fundamentals for Everyone,” by astrophysicist **Dr. Neil deGrasse Tyson** and U.S. Air Force and U.S. Space Force Acquisition Executive **Dr. Will Roper**.

Nearly 250 teams from 22 countries submitted proposals to take part in this unique pitch competition. Of those, 36 teams were selected to pitch their potentially game-changing concepts related to quantum timing, sensing, information processing/computing, and communications/networking at the event to an elite panel of judges. On Tuesday and Wednesday, September 1-2, 36 teams pitched ideas ranging from quantum sensors for GPS-denied navigation and a chip-scale integrated quantum platform, to ion traps and innovative lasers, and on Thursday, September 3, 18 teams went on to qualify for a portion of the more than \$1M in basic research funding provided by the AFRL, AFOSR, and ONR.

The teams qualifying for the \$1M+ in basic research funds are:

- **Topic: Quantum Timing**
  - Nicolas Grandjean - Swiss Federal Institute of Technology (EPFL)
  - R. Jason Jones - University of Arizona
  - Shimon Kolkowitz - University of Wisconsin-Madison





- **Topic: Quantum Sensing**
  - Philippe Bouyer - Institut d'Optique Graduate School, CNRS
  - John Close - The Australian National University
  - Gurudev Dutt - University of Pittsburgh
  - Paul G. Kwiat - University of Illinois at Urbana-Champaign
  - David Simpson - University of Melbourne
- **Topic: Quantum Computing**
  - Fred Chong - University of Chicago and Pranav Gokhale - Super.tech
  - Kavan Modi - Monash University
  - Paolo Pintus - University of California Santa Barbara
  - Shyam Shankar - University of Texas at Austin and New York University
  - Andrew G. White - University of Queensland
- **Topic: Quantum Communications**
  - John Bartholomew - University of Sydney
  - Tobias J. Kippenberg - Swiss Federal Institute of Technology (EPFL)
  - Marco Loncar - Harvard University
  - Britton Plourde - Syracuse University
  - Alp Sipahigil - UC Berkeley

During a very robust keynote conversation titled “Quantum Fundamentals for Everyone,” astrophysicist [Dr. Neil deGrasse Tyson](#) and U.S. Air Force and U.S. Space Force Acquisition Executive [Dr. Will Roper](#), spoke about quantum physics, quantum mechanics, the universe and even fine art. The keynote portion of the day also included a Q&A and gave a few audience members the opportunity to ask Dr. Tyson quantum-related questions.

Laurel Violet White, a senior undergrad student studying Physics at Syracuse University, asked, “Do you have any idea what mystery in science we might be able to solve with a quantum computer?” Dr. Tyson’s replied, regarding the vast solar system, “We allow ourselves to make significant approximations on the belief that we are getting our insight into the larger system....if quantum computing allows us to do something for a million particles, is there something out there that has ten million...can we put all that on the computer? And then evolve nature exactly the way nature evolves, and not in some approximation, limited by our hardware? If that’s the case, then we will have complete knowledge of a system.”

“If you are a researcher, thank you for being here. We are rooting for you. I hope you win. I hope that you bring in that next spooky effect, that will eventually, hopefully, become commonplace for us, like the laser is today,” Dr. Roper spoke directly to the audience at the close of the keynote. “For the students that are here, we really welcome you. We are excited about your interest in science. The Air Force and the Space Force are great places to be scientists. We really, really love technology and science and service. We would like, at this event, which we will continue each year, to bring a new quantum phenomenon into the military. I don’t care what it is. We just want to start making this new battleground of physics, something that is as commonplace as the airplane or satellite is today.”

The event also featured breakout sessions, “Coffee and Concepts” and “Poster Sessions”, which were offered



the first two days of the event. “Coffee & Concepts” was a virtual 30-minute worldwide gathering, with attendees from around the globe, with the purpose of meeting new people, making connections and chatting about all-things quantum. “Poster Sessions” offered Quantum University researchers around the opportunity to contribute additional poster sessions on their work that could be viewed during the event. In addition, each poster contributor had the opportunity to offer a live chat session during which attendees could speak to authors about their work.

The “Million Dollar International Quantum U Tech Accelerator” was the kick-off event for the Innovare Advancement Center, the new open innovation campus located at the Griffiss Business and Technology Park in Rome, NY. The opening ceremony of the event included a dynamic video with remarks from **Congressman Anthony Brindisi**, United States Representative, NY 22nd Congressional District; **Jacqueline Izzo**, Mayor, City of Rome; **Colonel Timothy J. Lawrence**, Director, Air Force Research Laboratory Information Directorate; and **Heather Hage**, Vice President, Industry and External Affairs, SUNY Research Foundation.

“The Air Force Research Laboratory Information Directorate welcomes you to the Innovare community, our launch pad for creative collisions among the international research community,” said **Colonel Lawrence** during the opening ceremony. “The Air Force Research Laboratory launched the ‘1 Million Dollar International Quantum U Tech Accelerator’ in partnership with the Air Force Office of Scientific Research and Office of Naval Research, because *we* are focused, and *we* are motivated, and *we know* you are too, to accelerate the achievement of quantum breakthroughs that can elevate our game – in the air, on the land, at sea, in space and cyber space.”

Welcoming remarks were provided by **Dr. Michael Hayduk**, Deputy Director, Air Force Research Laboratory Information Directorate; **Brigadier General Heather Pringle**, Commander, Air Force Research Laboratory, Air Force Material Command; **Rear Admiral Lorin Selby**, Chief of Naval Research, Office of Naval Research; and **Dr. Shery Welsh, Director**, Air Force Office of Scientific Research (AFOSR).

“With the opening of the Innovare Advancement Center, we’re bringing together government, industry and academia, and it’s a great place for researchers from all around the world to come together and continue this important work,” said **Brigadier General Pringle**, in her opening remarks. “Quantum breakthroughs are challenging and it’s going to take all of us coming together, to solve them effectively.”

In addition to the above, these honorable guest speakers also took part in the 3-day event:

- **Dr. Anthony J. Annunziata**, Director of the IBM Quantum Network
- **Dr. Joseph Broz**, Senior Advisor for Quantum, Air Force Research Laboratory; Executive Director and Governing Board Chairman, The Quantum Economic Development Consortium
- **Dr. Roberto Diener**, Program Officer, Atomic, Molecular, and Quantum Physics, Office of Naval Research
- **Dr. Eden Figueroa**, Associate Professor, Department of Physics and Astronomy, Stony Brook University
- **Mr. James F. Geurts**, Assistant Secretary of The Navy for Research, Development & Acquisition
- **Mr. Bill Hartnett**, Managing Director, Citigroup
- **Dr. Paul Lopata**, Principal Director of Quantum Science, Office of The Under Secretary of Defense
- **Dr. Grace Metcalfe**, Program Manager, Quantum Information Science and Atomic and Molecular Physics, Air Force Office of Scientific Research



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- **Dr. Satyavolu S. Papa Rao**, NY Creates
- **Mr. Anthony Picente, Jr.**, Oneida County Executive
- **Dr. Kathy-Anne Soderberg**, Senior Research Scientist, Air Force Research Laboratory Information Directorate
- **Dr. Thomas Stace**, Physics Professor, University of Queensland Australia
- **Dr. Charles Tahan**, Technical Director of the Laboratory for Physical Sciences - OSTP
- **Dr. Grace Wang**, Senior Vice Chancellor for Research and Economic Development, Interim President of SUNY Polytechnic Institute

Innovare’s key strategic collaborators seek to engage partners to initiate entrepreneurial ventures and tech startups in key strategic areas, including artificial intelligence/machine learning, cybersecurity, and quantum, in addition to building a robust talent pipeline at a time when scientific advancement across boundaries is needed now more than ever to remain economically and strategically competitive in this fast-changing world.

As Innovare-connected research takes place at partnering organizations all over the world, the Innovare launch is concurrently a bold step forward in implementing the National Quantum Initiative Act, which aims to foster the development of a quantum technology ecosystem among government, industry, and academia.

The 3-day event is now available for viewing on YouTube:

- Day 1 - <https://youtu.be/rsF5g85kXoM>
- Day 2 - <https://youtu.be/QktdRyOxHvY>
- Day 3 - <https://youtu.be/lg4bR4GTNvw>

More information about Innovare Advancement Center can be found here: [www.innovare.org](http://www.innovare.org).

*(Photos are of the Quantum U team, gathered at NYSTEC, while the virtual event was taking place. Photo 04: Col. Lawrence speaking during event. Photo 01: Team watching Dr. Neil deGrasse Tyson on the monitors. Photo Credit: AFRL.)*

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**About Innovare Advancement Center**

Innovare Advancement Center aims to be a global catalyst to converge world-class talent with cutting-edge facilities and focused technology challenges to accelerate the development of game-changing capabilities that protect and empower our country. An open innovation environment immediately adjacent to Air Force Research Laboratory’s Information Directorate in Rome, NY, Innovare Advancement Center offers a globally connected innovation ecosystem in which world-class scientific, engineering, and entrepreneurial talent from universities, government, and industry can leverage highly specialized resources in critical research areas, including artificial intelligence/machine learning, cybersecurity, quantum, and unmanned aerial systems to tackle the country’s greatest challenges to national security and economic competitiveness. To learn more, visit [innovare.org](http://innovare.org).

