The White House Academic Roundtable on Quantum Information Science

Friday, May 31

Open Press Sessions Run of Show

OPENING REMARKS

Dr. Jake Taylor, Assistant Director for Quantum Information Science at The White House Office of Science and Technology Policy

Michael Kratsios, Deputy Assistant to the President for Technology Policy

Dr. Kelvin Droegemeier, Director of The White House Office of Science and Technology Policy

DISCUSSION SESSIONS:

Roundtable conversations led by senior Administration officials will tackle some of the most critical topics related to QIS, such as workforce issues, lab to market integration, and federal collaboration opportunities.

DISCUSSION SESSION ONE: QUANTUM ACADEMIC PROGRAMS & THE WORKFORCE

Leader: Dr. France Cordóva, Director of the National Science Foundation to lead discussion

DISCUSSION SESSION TWO: CHALLENGES & OPPORTUNITIES FOR AMERICA'S QUANTUM INSTITUTES

Leader: Paul Dabbar, Under Secretary for Science, the Department of Energy, to lead discussion

DISCUSSION SESSION THREE: LAB TO MARKET QUANTUM INNOVATION INTEGRATION

Leader: Dr. Walt Copan, Director, the National Institutes of Standards and Technology

PANEL SESSION: THE PRIVATE-PUBLIC MODEL IN QUANTUM INNOVATION

Moderator: Jennifer Shieh, Assistant Director for Entrepreneurship at The White House Office of Science And Technology Policy

Panelists: Dr. Paul Sanberg, National Academy of Inventors; Dr. Ellie Fini, Arizona State University; Dr. Shaun Maguire, Google Ventures

Attendees and Participants

Academic Leaders

Delaware State University Melissa Harrington, Assistant Vice President of Research	**University of Chicago** Matt Tirrell, Dean of Faculty
Georgia Institute of Technology Chaouki Abdallah, Vice President of Research	**University of Colorado, Boulder** Terri Fiez, Vice President of Research
Louisiana State University Sam Bentley, Vice President of Research	**University of Maryland, College Park** Laurie Locascio, Vice President of Research
Harvard University Frank Doyle, Dean of Engineering	**University of Michigan** Steve Cundiff, Professor of Physics
Massachusetts Institute of Technology Maria Zuber, Vice President of Research	**University of New Mexico** Gabriel Lopez, Vice President of Research
Morgan State University Willie May, Vice President of Research and Economic Development	**University of Pittsburgh** Rob Rutenbar, Vice Chancellor for Research
Mount Holyoke College Kathy Aidala, Chair, Physics	**University of Southern California** Yannis Yortsos, Dean of Engineering
Princeton University Pablo Debenedetti, Dean for Research	**University of Texas at Austin** Paul Goldbart, Dean of Science
Purdue University Tomás Díaz de la Rubia, Vice President, Discovery Park	**University of Washington** Mary E. Lidstrom, Vice President of Research
Stanford University Kathryn Moler, Vice President of Research	**University of Wisconsin, Madison** Steven Ackerman, Association Vice Chancellor for Research
University of Arizona Tom Koch, Dean of Optical Sciences	**Yale University** Peter Schiffer, Vice President of Research
University of California, Berkeley Randy Katz, Vice Chancellor for Research	

Administration Officials

Dr. Kelvin K. Droegemeier, Director, The White House Office of Science and Technology Policy
Michael Kratsios, Deputy Assistant to the President for Technology Policy
Dr. France Córdova, Director, National Science Foundation
Dr. Walt Copan, Director, National Institute of Standards and Technology
Paul Dabbar, Under Secretary for Science, Department of Energy

FACT SHEET: President Donald J. Trump Signs the National Quantum Initiative Act into Law

SUPPORTING QUANTUM RESEARCH & DEVELOPMENT: In December 2018, President Donald J. Trump signed into law the National Quantum Initiative Act to accelerate quantum information science (QIS) research and development in the United States.

- The bill establishes the National Quantum Initiative (NQI), a coordinated 10-year national program to promote investment in QIS R&D, support a quantum-smart workforce, and partner across the Federal government, industry, and academia to ensure American leadership in this field. To support the NQI program, the bill;
    - Establishes a National Quantum Coordination Office to oversee and support the program;
    - Authorizes a National Science and Technology Council Subcommittee on QIS, comprised of Federal agencies working on quantum science research and development, and tasks the subcommittee with developing the Nation's first 5-year strategic plan for the NQI;
    - Establishes a National Quantum Initiative Advisory Committee made up of stakeholders from industry, academia, and research to advise the President on QIS issues and make recommendations to the NQI strategic plan.
- It authorizes $1.2 billion over five years for quantum activities across the Federal government.
- It supports the National Institute of Standards and Technology (NIST) in the development of measurement and standards infrastructure for QIS to support quantum science and industry.
- It establishes and builds upon basic research and education programs on QIS at NIST, the National Science Foundation, and the Department of Energy, with new, large-scale approaches to integrating innovation and scientific discovery.

ADVANCING QUANTUM SCIENCE IN AMERICA: The Trump Administration is committed to maintaining and expanding American leadership in QIS.

- Quantum Information Science encompasses a broad field of scientific research that seeks to exploit the unique properties of substances at the sub-atomic, or quantum, level that classical physics cannot explain. Computers built to take advantage of these quantum properties can handle new workloads and solve much more difficult challenges than traditional computers.
- QIS is more than theoretical --- it is a fast-growing field that is already part of everyday life. The semiconductors that power our smartphones, the GPS devices that enable navigation, and the images produced by an MRI machine are all examples of quantum science in action.
- We are on the verge of a technological revolution in QIS that promises to change the way Americans live, work, and understand the world. QIS has the potential to transform industries, create jobs, and yield great benefits for the American people. The Administration's

strong focus on advancing QIS technologies is essential to the Nation's success in innovation, economic growth, and national security.

BUILDING ON A RECORD OF LEADERSHIP: The Trump Administration has already made important progress supporting QIS research and development.

- *August 17, 2017:* The White House OSTP and Office of Management and Budget (OMB) issued a memo to the heads of Executive Departments and Agencies defining quantum computing as a top research and development priority for the FY 2019 Federal budget
- *December 2017:* Physicist Dr. Jacob Taylor joined the Trump Administration to serve as the first-ever Assistant Director for QIS at OSTP
- *April 11, 2018:* The National Institute of Standards and Technology (NIST) published a method for generating truly random numbers using quantum mechanics
- *April 27, 2018:* OSTP launched a new National Science and Technology Council (NSTC) subcommittee on QIS to guide and coordinate agency priorities and Federal research across the whole of government
- *June 26, 2018:* Chairman Lamar Smith of the House Committee on Science, Space and Technology introduced The National Quantum Initiative Act (NQIA) in the House of Representatives
- *July 27, 2018:* Dr. Jake Taylor published "A Quantum Future Awaits" editorial in the journal *Science*
- *July 31, 2018:* OSTP and OMB issued a memo to the heads of Executive Departments and Agencies defining quantum computing as a priority for American R&D investment in the FY 2020 Federal budget
- *August 7, 2018:* The National Science Foundation launched a $15 million multi-institution quantum research collaboration to develop the world's first practical quantum computer
- *August 13, 2018:* President Trump signed the National Defense Authorization Act that directed an additional $20 million for funding QIS beyond existing programs and enabled new coordination within the Department of Defense
- *September 13, 2018:* The House of Representatives passed the National Quantum Initiative Act
- *September 24, 2018:* OSTP convened over 100 senior government officials, Nobel Laureates, academics, researchers, and industry leaders for the first-ever White House Summit on Advancing American Leadership in QIS
- *September 24, 2018:* At The White House QIS Summit, NSF announced $31 million in research funding for quantum science programs
- *September 24, 2018:* At The White House QIS Summit, the U.S. Department of Energy announced $218 million in funding for 85 research awards in QIS
- *September 24, 2018:* At The White House QIS Summit, NIST launched the Quantum Economic Development Consortium that supports quantum industry development

- *September 24, 2018:* The NSTC published the National Strategic Overview for QIS, which identifies key policy opportunities and recommendations to improve coordination on quantum science within the government and between public and private institutions, expand a quantum-smart workforce, build cross-community connections to enhance future progress, and cultivate a culture of scientific discovery
- *December 11, 2018:* The NSF, on behalf of the NSTC QIS Subcommittee, issued a call for public input into the policy recommendations detailed in the National Strategic Overview for QIS
- *December 13, 2018:* The National Quantum Initiative Act passed the Senate
- *December 21, 2018:* President Donald J. Trump signed The National Quantum Initiative Act into law.
- *January 31, 2019*: The DOE convened a Quantum Information Science Kick-Off Meeting for Principal Investigators
- *February 19, 2019*: The NSF issued a solicitation for Quantum Leap Challenge Institutes, consistent with the NQIA.
- *March 4, 2019:* OSTP chartered the National Quantum Coordination Office, as called for in the NQIA. Dr. Jake Taylor is named interim director.
- *May 3, 2019:* Dr. Jake Taylor published "The U.S. National Quantum Initiative: From Act to Action" editorial in the journal *Science.*
- *May 20, 2019:* The DOE opened a Request for Information and Notice of Intent for QIS centers.
- *May 30, 2019:* The NSF reopened the Request for Information for policy recommendations for QIS in response to the National Quantum Initiative Act**.**
- *May 30, 2019*: The White House hosts the Academic Roundtable on Quantum Information Science, bringing together top R&D leaders across the federal government and academia.