The U.S. needs a
National Quantum Initiative

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Quantum Information Theory: A Universal Language for the Behavior of Quantum Systems

- Everything is governed by the laws of quantum mechanics (It from Bit)
  - I believe we must embrace this fact
- Harnessing the quantum would lead to unimaginable breakthroughs
  - Unhacakable computer systems
  - Quantum GPS with unprecedented accuracy
  - Advances in AI surpassing classical limits... and much much more
- Information is physical!
- Quantum Information is mature enough to "bet on this technology"
- We can not afford not to lead this race for quantum supremacy

Where we are in Quantum Information

- Corporate involvement is well established
- Substantial government programs around the world
  - Masayoshi Son's; Japan/Saudia Arabian/UAE $100B
  - Human Technopole; Italy $1.75B
  - Quantum Technology Project; Europe $1.2B
  - National Lab in Quantum Information Science; China, $12B
- U.S. has beginnings of a path forward on multiple fronts
  - OSD Future Directions in QIP
  - DOE Office of Science: Quantum Testbed
  - NIST and NSA CAE-R Centers in Quantum
  - IRAPA and University Initiatives
  - DoD OSD/ARAP Quantum Science and Engineering Program (Q-SEP)

What does U.S. Need to Advance Right Now

- I am a proponent of a National Quantum Initiative
  - Consolidate what we have and grow in a clear delineated direction
- U.S. should focus on areas of national security
- Establish U.S. as the leader in *ALL* levels of education K-12, UG, G
- Educate the public on the importance of this initiative
- Mentor hardware development and growth of the industrial spectrum
- Announce to the world our major involvement