



Press Statement 19-007

NSF statement: New development in quantum computing



A piece of the quantum puzzle

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October 23, 2019

In [Quantum supremacy using a programmable superconducting processor \(/cgi-bin/good-bye?https://nature.com/articles/s41586-019-1666-5\)](https://nature.com/articles/s41586-019-1666-5), in the Oct. 24 issue of the journal Nature, a team of researchers led by Google present evidence that their quantum computer has accomplished a task that existing computers built from silicon chips cannot. When verified, the result will add credence to the broader promise of quantum computing. In addition to funding a broad portfolio of quantum research, including for other quantum computing systems and approaches, NSF has provided research support to five of the Nature paper's co-authors: John Martinis of the University of California, Santa Barbara; Fernando Brandao of Caltech; Edward Farhi of the Massachusetts Institute of Technology; Dave Bacon of the University of Washington; and Joseph Bardin of the University of Massachusetts at Amherst..

Today, Google announced that a quantum computer has accomplished a task not yet possible on a classical device. When verified, this may prove to be a milestone moment, one that builds on more than three decades of continuous NSF investment in the fundamental physics, computer science, materials science, and engineering that underlies many of today's quantum computing developments -- and the researchers behind them -- including five of the co-authors who helped create Google's system. As quantum research continues bridging theory to practice across a range of experimental platforms, it is equally important that NSF, other agencies, and industry invest in the workforce developing quantum technologies and the countless applications that will benefit all of society. Together, we will ensure continuing U.S. leadership in quantum computing.

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Media Contacts

Public Affairs, NSF, (703) 292-7090, media@nsf.gov (mailto:media@nsf.gov)

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National Science Foundation, 2415 Eisenhower Avenue, Alexandria, Virginia 22314, USA Tel: (703) 292-5111, FIRS: (800) 877-8339 | TDD: (800) 281-8749