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UCSB joins NSF's National Quantum Virtual Laboratory

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UC Santa Barbara professor [Daniel Blumenthal's](#) lab is part of one of four design teams from around the country selected by the National Science Foundation for its recently launched National Quantum Virtual Laboratory (NVQL). Aligning with colleagues at MIT, UCLA, Harvard and University of Maryland, Blumenthal's lab joins federal agencies and partners from the private sector to design high-tech infrastructure across the country in an effort to accelerate the development of useful quantum technologies by providing researchers anywhere in the U.S. with access to specialized resources. Currently, according to NSF, the hardware and software required for quantum science, engineering and technology development are highly bespoke and concentrated in relatively few labs.

"The National Quantum Virtual Laboratory is a critical bridge between basic discovery and deployment, specifically focused on turning America's leadership in fundamental quantum science into practical technologies, products, and systems that will strengthen our nation's competitiveness and ensure U.S. dominance in this field for decades to come," said Brian Stone, performing the duties of the NSF director.

Led by MIT Professor Dirk Englund, the team's project, called the Open Stack Ryberg Atom Quantum Computing Laboratory (ORAQL) will, among other things, create a digital twin model (a dynamic simulation that changes and responds to inputs) of a quantum computer that could be used by any U.S. researcher to test and refine new quantum algorithms. Additionally, the team's collective focus is on advancing quantum information science and engineering by pioneering developments in neutral-atom quantum platforms, with the goal of establishing quantum technologies and building a robust, inclusive U.S. research community.

The team will receive \$4 million over two years.

Tags

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