A team of four Stony Brook physicists, led by Prof. Vladimir Korepin and comprising Profs. Eden Figuera, Dominik Schneble, and Tzu-Chieh Wei has been awarded a SUNY grant for the development of a Center for Quantum Information Science .

Korepin and Wei, both theorists, work on entanglement theory in many-body systems, models of quantum computation, quantum algorithms, and simulations of complex quantum systems, while experimentalists Figueroa and Schneble work with systems of atoms and photons. Figueroa's group uses atomic ensembles to store and entangle photons for purposes of quantum simulation and as part of a room-temperature quantum communication network. Schneble's group uses atomic clouds at nanokelvin temperatures to engineer ultracold atomic quantum systems with which fundamental questions can be addressed through direct quantum simulation.

The team's expertise and core research activities reflect the four pillars of Quantum Information Science in communication, computing, simulation, and sensing. With the envisioned Center for Quantum Information Science at Long Island, SUNY aims to foster Stony Brook University's strong capabilities for solving basic science questions and stimulating technology developments, as well as to train a next-generation, quantum-smart workforce.