Center for Quantum Information Science & Technology
Board of Regents

Overview

Governor Noem's recommended budget includes $6,034,444 in general funds for a new Center for Quantum Information Science & Technology (C-QIST). South Dakota's universities are primed to advance in the groundbreaking area of quantum computing, enabling the resolution of intricate problems that surpass the capabilities of conventional computers. Multiple areas of national security may be impacted by quantum computing, including cryptography, communication security, machine learning, and artificial intelligence. Quantum computing can also dramatically impact healthcare with advancements in drug development, personalized medicine, optimization of healthcare systems and clinical trials, and medical imaging. This will be a partnership between DSU, School of Mines, SDSU, and USD.

Project Description

The four objectives of the center are:
1. Develop research agendas and establish programs that advance the use of quantum computing in various fields including cybersecurity, agriculture, healthcare, and materials science;
2. Implement degree programs in Quantum Information Science and Technology (QIST);
3. Advance the fields of artificial intelligence and machine learning through the power of quantum computing. These technologies are fundamental to solving critical issues in many disciplines including cybersecurity, healthcare, meteorology, and more; and
4. Serve as a resource center for South Dakota public and private institutions on the application of quantum computing in areas such as cybersecurity, materials science, agriculture, geospatial analysis, genomic analysis, and more.

Funding

The Governor's recommended budget includes funding for the initial start-up of the Center for Quantum Information Science & Technology. The funding will be used to support faculty and graduate students, hold an annual research symposium, and purchase access to cloud quantum computing resources from one or more of the major computing providers.