



Nathan Thobaben

nathan.thobaben@slu.edu

ADVISOR/MENTOR: Dr. David Wisbey

SPONSOR/GRANT: SLU

PROGRAM START: Fall 2020

BIOGRAPHY

Nathan graduated from West Point with a BS in Russian Language and was commissioned in the Army as an officer. He got out of the Army in 2015 and came to St. Louis for work, where he chose a new mission: to become an astronaut and a research physicist. He finished his second BS in physics at SLU and started his graduate degree in Engineering Physics in August of 2020.

Nathan got into research because he wanted to develop technology for radiation attenuation that can help humans go farther into space with less risk of cancer or illness. When he finishes his MS in Engineering Physics, he will develop some industry and research experience then apply to the Astronaut program.

RESEARCH

Nathan's research is in the improvement of superconducting quantum computing materials, using Niobium resonators to reduce the amount of dielectric loss and decoherence in superconducting quantum bits. This will increase the coherence time, giving the qubits more stability to execute calculations. Recently, they have been treating the resonators with hydrofluoric acid and rapidly getting them into the testing environment under vacuum to reduce surface oxidation. This has further improved decoherence time reduction.



SAINT LOUIS UNIVERSITY

—
PARKS COLLEGE OF ENGINEERING,
AVIATION AND TECHNOLOGY

