



Nicolas Cunningham
Senior
Middle Tennessee State University

Major: Engineering Technology

Faculty Advisor: Dr. David Gore

Program:
Research Alliance in Math & Science

Email: 6na@ornl.gov
Home: Nac2f@mtsu.edu

Research Area:

At ORNL, researchers have formed a promising new high-temperature superconducting wire. Combining a specially textured substrate, buffer layers that maintain the texture, and deposited films, the new wire can carry 710 times more current per unit area than conventional wire without energy-wasting resistance. However, within this research, involves measuring the superconducting properties of materials and do characterization of coated conductors using X-ray diffraction, resistivity, critical current, and cryogenics to gain more knowledge about the superconducting wire's disposition.

Research Mentor:
Patrick Martin
Functional/Superconducting Materials
Metals and Ceramics Division
Oak Ridge National Laboratory
(865) 574-5159
Email: martinpm@ornl.gov