



Enhancing the Nuclear Engineering Research Infrastructure in the Core Areas of Nuclear Materials and Radiation Detection at VCU

PI: Gokul Vasudevamurthy,
Virginia Commonwealth
University

Collaborators: Gary Tepper, Supathorn Phongikaroon,
Sama Bilbao y Leon, Virginia Commonwealth University

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ABSTRACT:

The department of Mechanical and Nuclear Engineering (MNE) at VCU offers academic degree programs in nuclear engineering at both undergraduate and graduate levels with steadily increasing annual enrollments. VCU's nuclear program is one of the two newly established programs in the entire country in more than a decade. In sync with increased demand for scientifically trained graduate professionals with nuclear engineering degrees from industries in Virginia, and the state's enthusiastic support to nuclear power, the MNE department recently started to offer a nationally unique hybrid doctoral program in mechanical and nuclear engineering. This program has started to attract a large number of students seeking advanced research degrees in the field. This new doctoral program in addition to the rapidly expanding BS and MS nuclear programs calls for a major expansion in both research and educational tools. At present the department hosts one full time teaching faculty and four full time research active faculty members with nuclear engineering focus.

Currently the nuclear specific research funding at VCU totals to more than 2.0M\$ with three major USDOE NEUP research grants along with other equally important DOE and NRC grants. However being brand new, the research infrastructure currently available to the program faculty and students is yet to achieve high levels of maturity in comparison with other engineering programs within the university and with other well established peer programs across the country. Funds will be utilized to add critical research and training infrastructure in two core areas of VCU's nuclear engineering program; 1) Radiation Detection and Measurement, and 2) Nuclear Materials Science. The infrastructure requested herein will allow VCU to strengthen its research portfolio and will empower nuclear engineering focused faculty to pursue relevant cutting edge research topics in areas which are in line with USDOE's research and development missions while positively impacting the output of professionals with advanced degrees in the field of nuclear engineering.