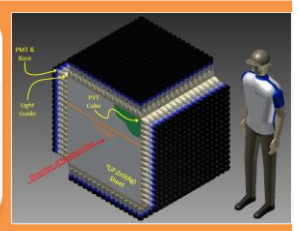
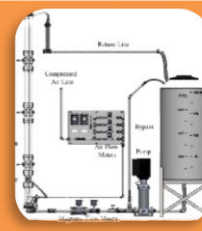


VT VIRGINIA TECH.
Nuclear Engineering Program



Offering at Two Campuses

Blacksburg (<http://nuclear.ncr.vt.edu>)

National Capital Region (NCR)
(<http://nrel.ncr.vt.edu>)

History of NEP

1956 - Started in the Physics Department
1985 - Terminated
2007 - Restarted as part of Mechanical Engineering Dept.
2014 – Approval of degrees by the State Council Higher Education for Virginia

Degrees Offered

- Doctor of Philosophy (PhD)
- Master of Science (MS)
- Master of Engineering (MENG)
- Accelerated MENG for US Naval Academy
- Graduate Certificate (GC) in NE

Faculty

2 Professors, 2 Assistant Professors, 1 Associate Professor of Practice, 1 Adjunct, and 8 Affiliates; *One faculty search*

Enrollment

Students in NEP

12 PhDs & 4 Masters

Multidisciplinary Students

PhD (4-ME, 1-MSE); MS (1-ME)

Funded Students

7 NRC fellows, 2 TAs, 9 RAs

NE Degrees Awarded since 2014

2 PhDs, 3 MS, 6 MENGs & 7 GCs

Research Activities

Address application of Nuclear Science and Engineering to *Power, Security, Medicine and Policy*; specific subject areas include: Nuclear Materials & Fuel; Particle Transport Methods; Reactor Physics; Reactor Shielding; Radiation Detection; and Thermal-Hydraulics & Reactor Safety

Research Groups/Labs/Centers

Facilities

Blacksburg

- Multiphase Flow and Thermal-Hydraulics Laboratory
- Nuclear Materials and Nuclear Fuel Cycle
- Molten Salt Loop (MSL) & High Temp Water Loops
- Computational Nuclear Materials

- Radiation Measurement and simulation lab
- Neutron Irradiation Lab (2 Neutron Generators)
- Access to VT's clusters

NCR

- Virginia Tech Transport Theory Group (VT³G)
- MARS - Center for Multiphysics for Advanced Reactor Simulation (funded by ICTAS)
- NSEL – (<http://nrel.ncr.vt.edu>)

- Virtual Reality System (VRS)
- 3 Research Group Computer Clusters
- Access to the US Naval Academy Subcritical Reactor and Nuclear Laboratories

Collaborations

- Multiphysics for Advanced Reactor Simulation (MARS) Center (multi-department, multi-organization)
- Center for Neutrino Physics -Optimization of the antineutrino CHANDLER detection
- GEM*STAR project – Design of Accelerator Driven System
- Advanced Materials Research with INL, LANL, ORNL, University of Wisconsin, MIT & University of Utah
- Nuclear Fuel Cycle Research with INL, GT, University of Utah
- School of Public and International Affairs (SPIA) – Nuclear policy education
- US Naval Academy – Research and education collaboration and sharing facilities
- Advanced Research Computing Virtual Reality - Creation of Virtual Reality Systems for nuclear reactor fuel cycle
- Virginia Nuclear Energy Consortium (VNEC) - Nonprofit organization in collaboration with AREVA, BWXT, Dominion, GE, Newport News shipbuilding, UVA & VCU

Research and Education Awards

\$2.0 M

Sponsoring Organizations

DOE, NRC, AFOSR, Bettis Atomic Power Lab, Babcock & Wilcox, Bechtel, Newport News Shipbuilding

Director: Prof. Alireza Hghighat, hghighat@vt.edu.