DOE Nuclear Energy University Program

NEUP in Idaho

Idaho’s public universities and the Idaho National Laboratory (INL), through collaborations fostered by the Center for Advanced Energy Studies (CAES), are conducting research and educating the future workforce that supports the nation’s and world’s increasing demand for affordable, safe, reliable and environmentally sound nuclear energy. Support from the highly competitive U.S. Department of Energy Nuclear Energy University Program (NEUP) has enabled the revitalization of the universities’ nuclear engineering, science, and related program research and educational programs.

Over the past seven years, Idaho universities have been awarded $18.9 million through the NEUP, including $16.9 million for research development, $1.5 million research infrastructure development, and $932,500 for student scholarships and fellowships. With this funding, Idaho’s universities are engaged in science and engineering research leading to the development of new innovative technologies, providing creative solutions to current nuclear energy challenges and enabling future nuclear power development and deployment.

University of Idaho (UI) researchers have six active NEUP projects totaling more than $3.4 million. Current and past NEUP project topics at UI include recycling and storing used nuclear fuel, designing intelligent control systems for next-generation reactors, improving the service life of concrete, and recovering uranium resources from sea water.

Background

Through NEUP, the DOE designates up to 20 percent of its annual nuclear energy research and development budget to fund university-based projects and research infrastructure development activities through an open, peer-reviewed competition. These competitions address both the near-term specific needs and long-term general needs of DOE nuclear energy R&D programs, as well as infrastructure improvements that support the educational and research missions of the participating universities.

The Center for Advanced Energy Studies is a consortium among Boise State University, Idaho State University, the University of Idaho, the University of Wyoming and the Idaho National Laboratory, which is managed by the private entity Battelle Energy Alliance.

Recent Accomplishments

UI researchers led by Batric Pesic, a professor of chemical and materials engineering, began a two-year, $350,000 project on advanced electrochemical separation in spent nuclear fuel in October 2016.

UI researchers led by Indrajit Charit, an associate professor chemical and materials engineering, began a three-year, $800,000 project to develop science-based guidelines to select dopants for fast reactor fuel compositions in October 2016.
Upcoming Goals

- UI faculty have been invited to submit 12 full NEUP proposals for projects in FY17. Topics include cybersecurity research and development, experimental determination of critical heat flux for accident-tolerant fuels, studies of molten salt reactor materials and other critical issues in nuclear engineering and energy.
- Collaborators on these projects include the Idaho National Laboratory, Idaho State University, Brigham Young University, the University of Michigan, the University of Tulsa and the University of Alabama - Huntington, as well as industry partners.

Projected Impact of Continued and Increased Funding

Continued and expanded support of the NEUP program will allow the University of Idaho and Idaho’s other universities to continue to educate the next generation of nuclear professionals, support the mission of the INL and address the nation’s energy challenges.

Accounts: Energy and Water, Department of Energy, Nuclear Energy

FY17 Funding: 20% of Nuclear Energy R&D account