CAES NEWS
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Center for Advanced Energy Studies • Monthly Newsletter

Idaho universities get money for nuclear energy research

By Kortny Rolston, INL Communications

The U.S. Department of Energy has awarded Idaho's three public research universities more than $5.8 million to conduct cutting-edge nuclear energy research.

The federal agency announced May 6 that it is funding 71 research and development proposals worth roughly $44 million at U.S. colleges through its Nuclear Energy University Programs (NEUP). Altogether, eight projects from Boise State University, Idaho State University and University of Idaho were selected.

"Idaho colleges did really well," said Dr. Marsha Lambregts, NEUP program manager. "Idaho was in the top three states for the number of proposals being funded."

The Idaho projects cover a wide range of nuclear energy research including materials science, radiochemistry, modeling and simulation.

Here are the titles and funding level for each project:

Boise State University
Irradiation Creep in Graphite
$785,396

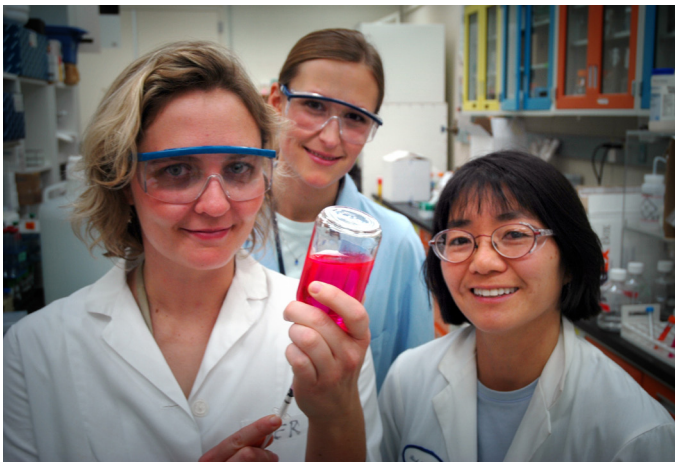
Idaho State University
Removal of 14C from Irradiated Graphite for Graphite Recycle and Waste Volume Reduction
$681,205

Advanced Elastic/Inelastic Nuclear Data Development
$1,497,500

University of Idaho
Experimental Study and Computational Simulations of Key Pebble Bed Thermomechanics Issues for Design and Safety *$557,279*

Data Collection Methods For Validation of Advanced Multi-Resolution Fast Reactor Simulations *$912,317*

Prediction and Monitoring Systems of Creep-Fracture Behavior of 9Cr-1Mo Steels for Reactor Pressure Vessels
$503,188



Fabrication of Tungsten-Rhenium Cladding Materials via Spark Plasma Sintering for Ultra High Temperature Reactor Applications *$682,258*

Ionic Liquid and Supercritical Fluid Hyphenated Techniques for Dissolution and Separation of Lanthanides, Actinides, and Fission Products *$202,869*

In CAES you didn't know...

Like the rest of the country, the state of Idaho has struggled during this economic downturn. Revenue is down. Expenses are up. And thousands of jobs are being lost.

It made 2009 an extremely tough legislative session for our citizen lawmakers. They faced the unenviable task of trimming budgets and downsizing popular programs.

And that makes their continued support for the Center for Advanced Energy Studies all the more noteworthy.

For the second consecutive year, legislators set aside $1.6 million so faculty members from our partner schools – Idaho State University, University of Idaho and Boise State University – can continue to work at and with CAES.

This is key to our mission. CAES was built to foster collaboration between Idaho National Laboratory, the universities and private industry.

Without the involvement of BSU, ISU and UI professors and graduate students, CAES would simply be a new building. They are involved in every aspect of our research and in many instances, are overseeing or working on large projects.

For example, Dr. Darryl Butt of Boise State University runs the advanced materials research lab in which a Spark Plasma Sintering System was recently installed. There are only a few of the systems in the country. Housing it here means BSU students and faculty can use it and so can researchers from ISU, UI and INL.

Everyone gains from this type of arrangement. We're lucky Idaho lawmakers recognized that and supported us in these tight times.

Harold S. Blackman

Harold Blackman
CAES Director

CAES, Boise State University awarded National Science Foundation Grant

by: Kortny Rolston, INL Communications

The Center for Advanced Energy Studies and two partner colleges are close to forming the first National Science Foundation university/industry cooperative in the region.

The agency recently awarded CAES, Boise State University and Utah State University $20,000 to meet with companies interested in partnering on research through their joint Radioactive Materials Processing Center (RAMP-C).

Several businesses and agencies have already registered for the June 25-26 meeting in Idaho Falls, including Areva, Premier Technology and the Idaho governor's office.

"This meeting is about getting this center rolling," said Darryl Butt, chair of Boise State's Materials Science and Engineering Department.

The meeting will focus on research, laboratories and other capabilities CAES, Boise State and Utah State can provide and how National Science Foundation cooperatives work.

By the end, Butt and other organizers are hoping most of the 30-plus companies expected to attend will agree to partner with RAMP-C – and fund research.

"We want to secure enough commitments to get this going," Butt said.

From there, the National Science Foundation will decide whether to designate RAMP-C as an industry/university cooperative research center and provide start-up money to cover its operating costs for five to 10 years.

The agency established the cooperative centers in the 1960s as a way for universities and industries to collaborate on various research projects. Because the National Science Foundation covers the initial overhead, the universities are able to conduct research for companies at a reduced cost.

In exchange, students work on real-world projects and industry gains access to experienced faculty and labs that might otherwise be too expensive.

Butt said the projects tend to be industry-focused, but companies do not dictate the direction of the research.

"The goal is to come together to solve common problems," he said. "We all have to agree on how to proceed."

There are only a handful of the centers in the country and none in Idaho, Utah, Wyoming or Montana. The closest is at the Colorado School of Mines.

"We're very excited about this," Butt said. "We think we can really make this work.""

Vendors moved Boise State University's spark plasma sintering system into CAES' materials laboratory in April. The device allows CAES researchers to combine metals, ceramics and other hard-to-process materials. It will play a key role in the research conducted at the Radioactive Materials Processing Center (RAMP-C).

Did you know?

The 55,000-square-foot Center for Advanced Energy Studies building is owned by the state of Idaho. Idaho State University maintains the building and grounds.

Idaho National Laboratory leases 70 percent of CAES. Each of the partner schools – ISU, Boise State University and the University of Idaho – lease 10 percent of the space.

CAES, Boise State University and Utah State University are holding a planning meeting June 25-26 in Idaho Falls to discuss forming a National Science Foundation university/industry research cooperative. Registration is free.

To learn more about the meeting, go to http://coen.boisestate.edu/IndustryCenter/home.asp.

What is RAMP-C?

The Radioactive Materials Processing Center (RAMP-C) is a joint venture between Boise State University, Utah State University and CAES.

RAMP-C's research is focused on developing efficient, recyclable nuclear fuels that can't be used to manufacture weapons, nuclear fuels that could power shuttles during space missions and nuclear medicine.

Researchers will work out of all three locations although much will be based at CAES' materials laboratory.

To submit story ideas, calendar items or other information for upcoming CAES newsletters, please send an e-mail to Kortny.Rolston@inl.gov.