Richland, Washington **January 2003**

Bioproducts laboratory would benefit region, state, community

Pacific Northwest National Laboratory and Washington State University Tri-Cities are proposing construction of a Bioproducts, Sciences, and Engineering Laboratory on the WSU Tri-Cities campus. The proposed facility would combine research at PNNL with related research and education missions at WSU.

The facility would provide classrooms, teaching laboratories and engineering development laboratories. Washington State Governor Gary Locke's 2003 budget request includes funds for design of the facility.

The Bioproducts, Sciences, and Engineering Laboratory would contribute to a stronger agriculture industry in the state by providing technologies that use waste materials, give higher value to low-value byproducts and help make farmers and food processors more competitive. It would also serve the growing viticulture and winemaking industry in Washington and provide students with real-world research projects.

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Public television examines efforts to save wild salmon

A Scientific American Frontiers program featuring actor Alan Alda is scheduled to broadcast a segment about a Pacific Northwest National Laboratory technology to help save salmon.

The program, "Deep Crisis," focuses on the efforts of scientists trying to help save wild salmon in the Pacific and Atlantic oceans and bluefin tuna in the Atlantic. Alda and a Public Broadcasting Service crew visited McNary Dam in Northeastern Oregon last summer to film PNNL scientists deploying a Laboratory technology called the Sensor Fish. An electronics-packed dummy fish, the Sensor Fish can help scientists study what happens to fish during turbine passage. The Sensor Fish measures and records environmental conditions juvenile salmon encounter as they pass through hydropower dams in an effort to correlate salmon passage with injuries. The show airs Tuesday, January 28, 9-10 p.m. Check local listings for the time and station in your area.

Research spending on the rise

Research spending in the United States—especially federal spending—will increase in 2003, according to the R&D Funding Forecast, a joint report produced by Battelle and *R&D Magazine*. Battelle operates Pacific Northwest National Laboratory for the U.S. Department of Energy.

Total R&D expenditures in the U.S. are expected to increase about 3.4 percent over 2002 expenditures to nearly $302 billion in 2003, according to the study. Federal spending, estimated at $89 billion, will rise 10.5 percent. Homeland security issues are responsible for the rise in government research spending.

Corporate R&D spending, which accounts for the largest share of research and development money in the U.S., will remain flat with $194 billion projected. Lack of growth in corporate spending is attributed to a weak economy and corporate accounting scandals. Universities and other non-profits are expected to spend more than $18 billion on R&D, an increase of about 7 percent over 2002 expenditures. For a copy of the report, contact Ginny Sliman at 509-375-4372 or **virginia.sliman@pnl.gov**.

High-tech investor network launched

A regional partnership of economic development organizations led by Pacific Northwest National Laboratory recently launched the Northwest Technology Investor Network (www.techinvestnw.com). The network is an online forum that links investors and entrepreneurs in the high-tech sector.

Technology-based businesses and manufacturers throughout the Pacific Northwest can post their business plans on the Web site, which connects them to a nationwide network of accredited investors. Investors have one-stop access to quality business plans in the high-tech sector.

The network is hosted by LocalFund, a nationally recognized company that hosts investor networks throughout the country. It is free to accredited investors who register and is offered at a 25 percent discount to high-tech and manufacturing entrepreneurs for a cost of $18.75 per month. Further discounted rates also are available for semi-annual and annual postings.

In addition to PNNL, partners in making the network available to entrepreneurs and investors include the Tri-Cities Enterprise Center, the Tri-City Industrial Development Council, the CH2M HILL Technology Education Center, the Applied Process Engineering Laboratory, Washington State University Tri-Cities Business Links and the Spokane Intercollegiate Research and Technology Institute. For more information, contact Gary Spanner, 372-4296 or **gary.spanner@pnl.gov**.

Battelle serving the Pacific Northwest

Battelle operates the Pacific Northwest National Laboratory for the U.S. Department of Energy. As part of the operating agreement, DOE allows Battelle to conduct a certain amount of projects at PNNL on behalf of other government and industry clients. Much of this work—about 30 percent in 2001—came from clients in the Pacific Northwest.

While most of Battelle's Northwest business comes from clients in the state of Washington, Battelle also does a significant amount of work for clients in Oregon and Idaho. The Portland Office of the Army Corps of Engineers, for example, was Battelle's second largest contracting client in the Northwest in 2001. The largest contracting client was Bechtel National in Washington. But Battelle also did about a half million dollars in business with Oregon Health & Science University and about $60,000 with Idaho Power Company.

Other 2001 clients included the city of Chehalis, Wash., the University of Washington and the Public Utility District of Grant County, Wash. Oregon clients ranged from the Port of Portland to the city of Eugene.

Designer molecules set trend in science

Advanced computational tools developed by researchers at Pacific Northwest National Laboratory are being used to design and build new molecular structures that can be applied to speed up environmental cleanup and used with pharmaceuticals and industrial processes. Using these methods, scientists have designed a new "ligand" or receptor that targets the f-block metal ions, a group of metal ions present in radioactive waste. Experimental studies have shown that the "designer" diamide ligand is 10 million times more efficient at removing f-block metals from process waste than conventional diamide ligands.

The ligand design methodology has been automated in a new computer software program called HostDesigner. This program was created specifically for the discovery of molecules that bind with metal ions—an application that is crucial for environmental cleanup and other industrial processes where the objectives are to detect and recover metals. "Our ability to design ligands tailored for specific applications will save time and money by focusing research efforts on the most promising ligand structures," says Ben Hay, creator of HostDesigner.

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This publication is available online at http://www.pnl.gov/sharingscience

RL-P00-007 Jan. 20, 2003