Science.

Technology.

Innovation.

Science to Solutions: Research and Development

Pacific Northwest National Laboratory (PNNL) – with its main research campus in Richland, Washington – is a Department of Energy Office of Science research facility that conducts fundamental research into complex chemical, physical and biological systems and provides science-based solutions to critical issues in national security, energy and environmental quality. The laboratory employs more than 3,800 scientists, engineers, technicians and support staff, and has an annual budget of nearly $600 million. Battelle, based in Columbus, Ohio, operates PNNL for the federal government. PNNL researchers have published thousands of papers, have authored over 1000 patents, and have more than 250 patents pending. Currently, PNNL has over 200 active patent and copyright licenses with a wide variety of industrial partners.

PNNL providing R&D to industry

The Department of Energy and Battelle have created a unique vehicle that opens the door for industrial partners to contract privately funded R&D at Pacific Northwest National Laboratory. This form of contracting has resulted in hundreds of millions of dollars of contract research and development to date within the laboratory for a myriad of industrial partners in the automotive, energy, chemical, biological, environmental, and pharmaceutical industries.

Through this contracting vehicle, industrial partners are able to leverage the government R&D results and infrastructure. Conversely, government research at the laboratory benefits from the formation of industrial partnerships, which can deploy new government solutions, and from the added technical base provided through expanding the research into industrial applications.

PNNL has significant R&D strength in chemistry, materials, catalysis, advanced IT software, high-performance computing, biology and engineering. Specifically, the laboratory has capabilities in several critical areas such as:

- Systems biology and biotechnology, including biomolecular signatures
- Chemical and material processing technologies, including catalysis.
- High-performance computing including, including advanced modeling, information analytics and security
- Environmental science and technology from waste clean-up through the development of predictive technologies and bio-based products
- Climate science and carbon management technologies
- Advanced scientific instruments and detection technologies
- Energy generation, transmission and distribution systems, including power grid operations, advanced transportation emissions and power systems

Pacific Northwest National Laboratory
Operated by Battelle for the U.S. Dpeartment of Energy

PNNL maintains sophisticated research facilities and equipment, including the Prototype Sample Processing and Proteomics Facility for characterizing protein complexes, laboratories for the development of technologies for environmental clean-up, the William R. Wiley Environmental Molecular Sciences Laboratory, a DOE user facility that boasts a 900 megahertz wide bore nuclear magnetic resonance spectrometer, one of the world's largest and fastest supercomputers, and the National Proteomics Research Resource Center.

Avenues for partnering with PNNL

PNNL has a variety of contract vehicles in place to facilitate industrial partnering with the laboratory.

- Contract directly with Battelle – through a unique Use Permit arrangement with the government, Battelle is able to use certain facilities and equipment that belong to the government and are assigned to Battelle for its operation of PNNL. This allows for proprietary work for individual companies.
- CRADA – Cooperative Research and Development Agreement. This is a contract between the laboratory and industrial or university partners for cost-shared collaboration on DOE-sponsored R&D activities
- Commercial Work for Others program – this program enables non-federal organizations to access PNNL's specialized R&D capabilities. This program is intended to allow industry to accomplish research goals that may otherwise be unattainable, access the highly specialized facilities and technical expertise of national laboratory researchers and assist in the transfer of technologies from the laboratory to the market for further development or commercialization.
- User Facilities Agreement – this vehicle provides access to certain dedicated DOE laboratory facilities to our partners.

Join an award winning R&D team

For almost 40 years, *R&D Magazine* has honored inventors by identifying the 100 most technologically significant products and advancements each year and recognizing the winning innovators and their organizations. Pacific Northwest National Laboratory has received 62 of these coveted R&D 100 Awards since the lab began submitting entries in 1969.

Additionally, the Federal Laboratory Consortium has honored PNNL with three 2004 Excellence in Technology Transfer Awards for technologies that enhance drug discover, treat cancer with fewer side effects, and advance the capabilities of sophisticated analytical instruments for biological and biomedical research. These awards are among 24 FLC awards being issued nationwide this year. With a total of 57 awards, PNNL has been honored by the FLC more than any other federal laboratory since the recognition program began in 1984.

The 11.5-Tesla Fourier transform ion cyclotron resonance mass spectrometer is used for biochemical applications involving protein characterization and in proteomic research.

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