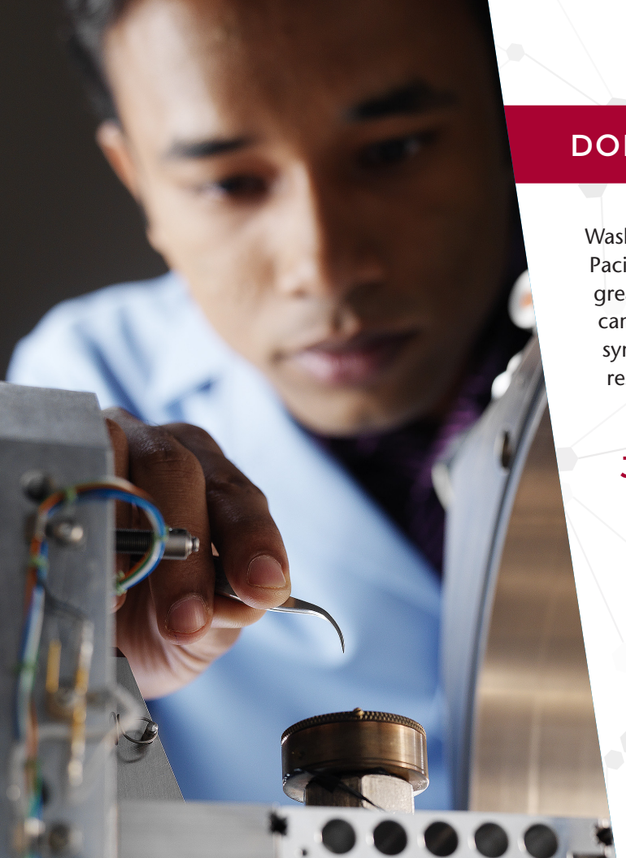
SYNERGY FOR HIGHER EDUCATION

WASHINGTON STATE UNIVERSITY TRI-CITIES | Pacific Northwest NATIONAL LABORATORY



DOING MORE TOGETHER

Washington State University Tri-Cities and Pacific Northwest National Laboratory make great neighbors and collaborators. Our campuses are near each other and we have a symbiotic relationship that brings educators, researchers and students together.

JOINT APPOINTMENTS

Joint appointments between WSU Tri-Cities and PNNL allow professors to put on a lab coat at a national laboratory. These appointments also bring researchers to the lecture hall and classrooms. Joint appointments increase both parties' access to new funding sources, graduate students, training opportunities and unique instrumentation and facilities.

WORLD CLASS EXPERTISE

As of January 2016, 26 PNNL staff members were teaching at WSU Tri-Cities, bringing specialized, world-class expertise and international connections of a national lab to WSU-Tri-Cities' academic programs. Courses range from biology to chemistry, and from computer science and math to business—and more. PNNL staff members also serve as guest lecturers, on Ph.D. committees and on academic program advisory committees.

BEYOND GRADUATION

Each year, many students start their professional careers at PNNL by obtaining meaningful internships while working on their undergraduate and graduate degrees. In 2015, there were 13 PNNL staff that received their degrees at WSU Tri-Cities.

PNNL Engineer Doug McMakin, BS in EE from WSU Tri-Cities, is a key inventor of the millimeter-wave scanners that you see in airports worldwide. The multi-patented technology has won many national and international awards. Dave Sheen, a PNNL engineer who taught part time at WSU Tri-Cities, was also an inventor of this technology.

Geoscientist Erin McElroy earned a bachelor's degree from WSU Tri-Cities in Environmental Science with a minor in Geology. Her work at PNNL focuses on ion chromatography and she is conducting additional research on containment remediation. Her next education step will be a master's degree from WSU Tri-Cities. "It will be great because I can do my research at PNNL and collaborate with my professors at WSU Tri-Cities," she says.

COLLABORATIVE RESEARCH

We work together in engineering and applied sciences, as well as interdisciplinary life sciences. Some of our research includes:

- Creating micropartical additives to control morphology of fungi in bioreactors for the production of commodity chemicals and enzymes
- Studying anaerobic digestion of hydrothermal liquefaction algae byproducts
- Deriving efficient catalysts for conversion of biomass-derived lignin to aliphatic aromatic and cyclic hydrocarbons

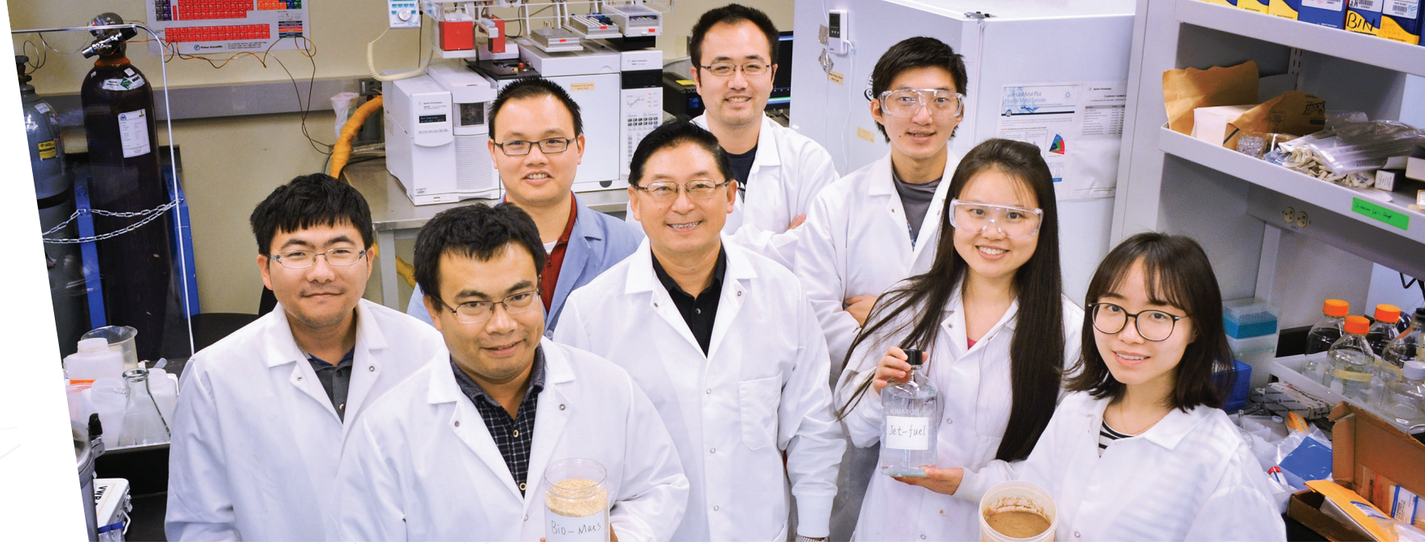
STUDENT RESEARCHERS

PNNL provides opportunities to engage undergraduates and graduate students in areas of research that will solve some of our nation's biggest science and technology challenges. We also serve the developing educational focus of the student. During their assignments, students can network with STEM professionals in an environment that provides empowerment.

BSEL BIOPRODUCTS, SCIENCES, AND ENGINEERING LABORATORY

Located on the WSU Tri-Cities campus, BSEL is a joint effort between WSU and PNNL where researchers are turning trash into fuel. Low-value agricultural byproducts and residues, like grape pumice, algae and even human sewage, become jet fuels. As part of the WSU Tri-Cities campus, BSEL has a key role in education. It contains both classrooms and teaching laboratories and it houses faculty, research labs and space for graduate student research.

BSEL opened May 2008 and the $24 million, 57,000-square-foot research and teaching laboratory features a Biorefinery and the Combinatorial Catalysis Research Lab, plus a variety of other laboratories and classrooms. The facility establishes the Tri-Cities as a center for world-class bio-based product research and development, creates a magnet for prominent scientists and helps the Northwest agriculture industry be more competitive.



DISCOVERY ADVANCES BIOWASTE-TO-JET FUEL RESEARCH

Researchers at PNNL and WSU Tri-Cities have found a way to successfully convert common wood byproducts into hydrocarbon molecules that could be used as jet fuel.

Bing Yang, an associate professor of biological systems engineering, said the hydrocarbons from his new procedure could eventually replace the need for petroleum-based fuel source.

WASHINGTON STATE UNIVERSITY
TRI-CITIES

2710 Crimson Way
Richland, WA 99354
509-372-7000 | info@tricity.wsu.edu
www.tricities.wsu.edu

Pacific Northwest
NATIONAL LABORATORY

For more information, please visit
www.pnnl.gov or science-ed.pnnl.gov
jointappointments.pnnl.gov
902 Battelle Boulevard
Richland, WA 99354
1-888-375-7665