



# Economic Impact of Pacific Northwest National Laboratory and Battelle on the Mid- Columbia Region

Community Science & Technology Seminar Series  
Mid-Columbia Library

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# Our Founder, Gordon Battelle



**Gordon Battelle**  
**1883-1923**

- ▶ Ohio industrialist; believed that research could make American industry more competitive
- ▶ Battelle Memorial Institute established according to his will and funded by his and his mother's estates
- ▶ Gordon specified that the non-profit institute would serve mankind through research, development, and education
- ▶ Battelle opens October 3, 1929
- ▶ Contract R&D

# Battelle at a Glance



**A leader in  
technology  
development and  
lab management**

- ▶ \$6.2 billion total revenue
- ▶ 20,400 staff (includes labs)
- ▶ 30+ scientific user facilities
- ▶ Battelle Memorial Institute has proudly operated PNNL since its inception in 1965



# PNNL: a national treasure in the Northwest



We deliver solutions to America's most intractable problems in energy, national security and the environment. Through the power of our interdisciplinary teams, we advance science and technology to make the world a better place.

- ▶ Proudly operated by Battelle since 1965
- ▶ More than 4,300 staff
- ▶ Unique capabilities
- ▶ Mission-driven collaborations with government, industry and universities



# Mission

We transform the world through courageous discovery and innovation.

# Vision

PNNL science and technology inspires and enables the world to live prosperously, safely and securely.

# DISCOVERY

*in action*

CREATIVITY  
integrity *Values* courage Impact  
COLLABORATION



**Pacific Northwest**  
NATIONAL LABORATORY

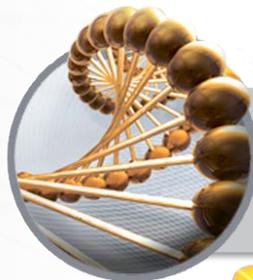
Proudly Operated by **Battelle** Since 1965

# PNNL science and technology benefit the nation



## Mission

We **TRANSFORM THE WORLD** through courageous **DISCOVERY** And **INNOVATION**.



Strengthen U.S. scientific foundations for innovation



Increase U.S. energy capacity and reduce dependence on imported oil



Reduce environmental effects of human activity and create sustainable systems

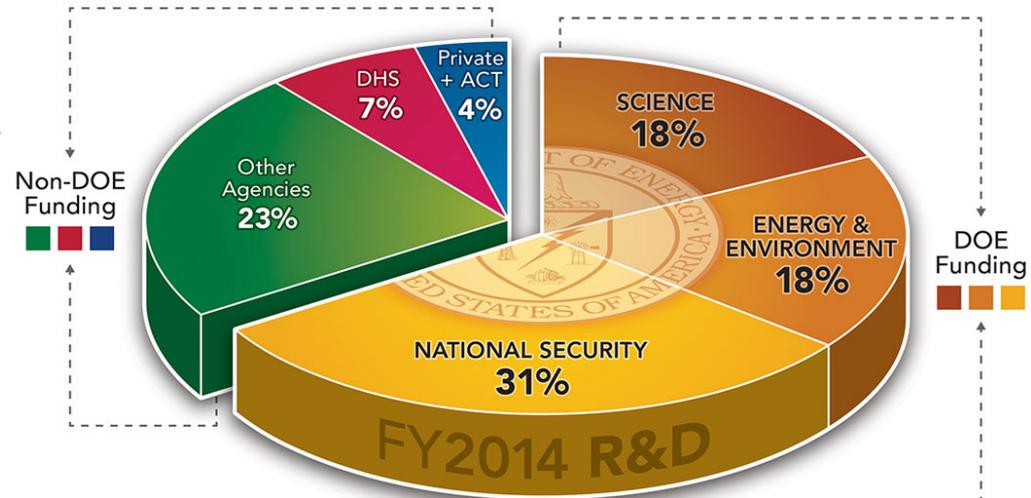


Prevent and counter terrorism and proliferation of weapons of mass destruction

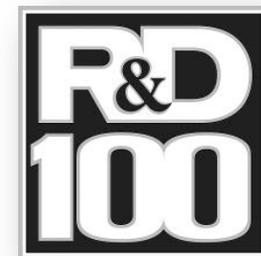
# Over the years, our portfolio has diversified and grown ... and been recognized



- ▶ 4,300+ staff, 1,000+ PhDs
- ▶ \$1.02B in R&D expenditures in FY14
- ▶ 2,342 U.S. and foreign patents as of FY14 (invention per day, patent per week)
- ▶ 93 R&D 100 Awards – *The Oscars of Invention*
- ▶ 81 Federal Laboratory Consortium (FLC) Awards for Excellence in Technology Transfer



**FLC**  
FEDERAL LABORATORY CONSORTIUM  
FOR TECHNOLOGY TRANSFER



# PNNL / Battelle innovations with everyday impact



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## Threat detection

Holography



Optical digital recording



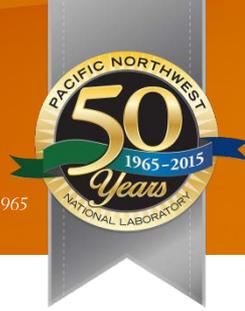
Lightweight lift gate



Coatings for curved digital displays



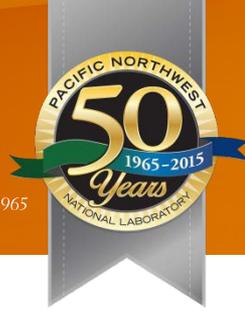
# PNNL's Economic Development Programs



- ▶ Technology Assistance Program
- ▶ Three Rivers Entrepreneur Network
- ▶ Access to funding sources (federal, state, private)
- ▶ Tech Business Update Newsletter
- ▶ Technology transfer mechanisms
- ▶ Lab-Corps entrepreneur training
- ▶ Small Business Vouchers
- ▶ Proprietary research
- ▶ Mentor-Protégé Program
- ▶ Entrepreneur support database
- ▶ Economic development column in Tri-City Herald
- ▶ Event organization and sponsorship
- ▶ University Technology Entrepreneurship Program

<http://www.pnl.gov/edo>

# Economic Development



- ▶ 170 businesses with roots at PNNL
- ▶ 1,500 local jobs
- ▶ Over 1,200 weeks of free technology assistance (40% local)
- ▶ At least 47 technology licenses for regional companies (31 local)

# Examples of Mid-Columbia companies that use PNNL technology/expertise

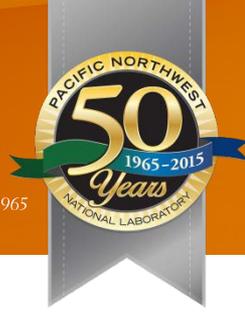


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# Publications & awards



- ▶ 1,121 peer-reviewed articles in 2014
- ▶ Among top 1% in publications and citations in ten fields in 2013
- ▶ 93 R&D 100 Awards (U.S. inventions with impact)
- ▶ 81 Federal Lab Consortium Awards (inventions deployed)
- ▶ 6 E.O. Lawrence Awards (nuclear advances)
- ▶ 4 *Discover Magazine* Awards
- ▶ 4 Presidential Early Career Awards

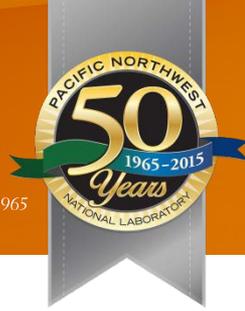
# 2013 economic impact in Washington State



- ▶ 4,344 employees
- ▶ \$1.31 billion in total economic output: payroll and purchased goods/services
  - 6,802 jobs generated in Washington
- ▶ \$1.21 billion total economic output from PNNL-related health care, spinoff companies, visitors, and retirees in Washington
  - 6,437 jobs generated in Washington
- ▶ 108 spinoff companies still operating, 76 in Washington
- ▶ \$324,000: in-kind corporate support for STEM education



# Show me the money! (annually)



- ▶ Payroll: \$401 million (thank you)
- ▶ Average annual wage: \$91K
- ▶ Employer-paid benefits: \$136 million (thank you again)
- ▶ State & local taxes: \$23 million
- ▶ Business & occupation taxes: \$102 thousand
- ▶ Sales & use taxes: \$317 thousand
- ▶ Property & leasehold taxes: \$952 thousand
- ▶ Construction & renovations: \$19 million
- ▶ Purchased goods & services: \$305 million (\$48M in Washington)
- ▶ 200 thousand visitor-days to PNNL (\$31 million in tourism spending)
- ▶ PNNL retirees: \$89 million in pension and Social Security income

# Committed to an enduring legacy for our community's quality of life



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# PNNL and Battelle in the community



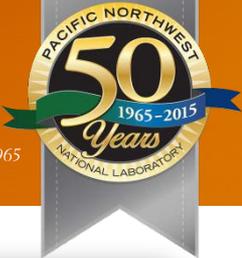
- ▶ More than \$1 million in charitable contributions in 2013, \$25 million since 1965
- ▶ \$3.9 million for Delta High School (\$1.5 million in cash)
- ▶ Numerous Science, Technology, Engineering & Mathematics (STEM) programs (2,900 participants in 2013)
- ▶ 44 thousand volunteer hours for 56 organizations in 2014
- ▶ \$257 thousand in staff contributions to United Way
- ▶ Over 225 thousand volunteer hours since 2004

# Collaborating to help shape our community's future



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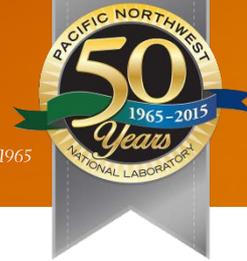
ELEMENT 8



# PNNL is an Integral Part of the Northwest Reputation for Innovation, Entrepreneurism, and Business Vibrancy



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- 
- Amazon.com (Seattle)
  - Boeing (Seattle)
  - Costco (Seattle)
  - Micron Technology (Boise)
  - Microsoft (Seattle)
  - Nike (Portland)
  - Pacific NW National Lab (Richland)
  - Starbucks (Seattle)
  - University of Washington (Seattle)
  - Washington State Univ. (Pullman)

PNNL is a key contributor addressing these Northwest issues:

- Border/port /cyber security
- Clean energy
- Environment
- Agriculture and climate change
- Data analytics
- Next-gen talent and STEM education

## Northwest Universities

- Collaborative research and development
- Joint centers and specialized research facilities in bioproducts, microtechnology, cyber security, data analytics and molecular sciences)
- Joint appointments, researchers in residence and teaching at universities
- Internships, post-docs, and jobs

## Northwest Public/Private Partnerships - examples:

- Northwest Regional Technology Center for Homeland Security
- Pacific Northwest Regional Smart Grid Demonstration Project
- Oregon Nanoscience and Microtechnologies Institute

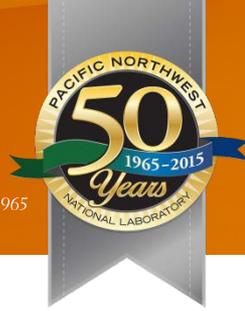
## Industry Partnerships

- Collaborate: develop, customize, prototype, deploy technologies
- Technologies available for licensing – over 250 active commercial licenses
- Early stage technology financing and business infrastructure partners

## Thought Leadership - Driving Northwest Business Climate

- Board memberships in key tech/business organization
- Participation in state and regional initiatives to grow tech-based business

# And in our free time.....



- ▶ A few board memberships: United Way, TRIDEC, Tri-Cities Regional Chamber of Commerce, Habitat for Humanity, Boys & Girls Club, CBC Foundation, CBC Board of Trustees, Three Rivers Community Roundtable, REACH Interpretive Center, Delta High School, Richland Economic Development Committee, WSU-TC Board of Advisors, Association for the Advancement of Science through Astronomy, Junior Achievement, Tri-Cities Visitor & Convention Bureau, Tri-City Water Follies, Tri-Cities Research District.....

Questions?



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