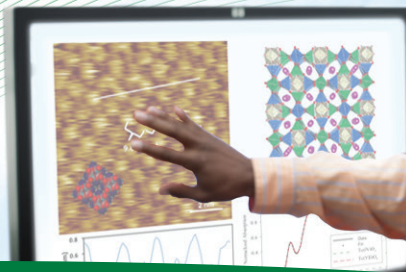




"I am excited for the next journey, the next question."

Eric Pierce,
Geochemist



Solving Big Problems

Oak Ridge National Laboratory (ORNL) provides exceptional researchers with distinctive equipment and unique facilities to solve some of the nation's most compelling challenges. As the largest US Department of Energy (DOE) open science laboratory, ORNL's mission is to deliver scientific discoveries and technical breakthroughs that will accelerate the development and deployment of solutions in clean energy and global security while creating economic opportunities for the nation.

Research and Development Activities

ORNL creates and deploys multidisciplinary and multi-institutional teams whose efforts transform fundamental research into new technologies and applications. Signature strengths in neutron scattering, high-performance computing, advanced materials, and nuclear science and engineering are the foundation for a broad research and development portfolio.

- Forefront science using neutrons
- Leadership-class computing, data infrastructure, and data analytics for science
- Advanced materials for energy applications
- Next-generation nuclear power
- Biological, environmental, and Earth system sciences
- Sustainable solutions for buildings, transportation, manufacturing, and energy generation and consumption
- Science and technology for national security

Researcher Excellence

ORNL equips its staff to build their credentials and to become leaders in their fields. The Lab strategically recruits top researchers from around the world, works with them to define high-impact goals, and provides the resources required for success—from facilities and instruments to collaborations and professional development. Learn more about ORNL researchers and their work at www.ornl.gov/news/profiles.

4,462

Research and mission support staff, including **1,100** staff scientists and engineers

3,200

Users and visiting researchers annually

1943

Established during the Manhattan Project

\$1.5 billion

2017 expenditures



Partnerships and Collaborations

Partnerships with other research institutions, universities, and industry are a vital resource for maximizing ORNL's impact. ORNL leads two major multi-institutional partnerships for DOE: the Center for Bioenergy Innovation, one of four DOE Bioenergy Research Centers, and the Consortium for Advanced Simulation of Light Water Reactors, a DOE Energy Innovation Hub. ORNL is also the lead institution for two DOE Energy Frontier Research Centers and hosts the project offices of two major DOE initiatives: the Exascale Computing Project and the US contributions to the international ITER fusion project.

Partnerships with academia help to build a robust pipeline of scientific and technical talent for the nation. ORNL and the University of Tennessee employ more than 250 joint faculty, including 17 Governor's Chairs recruited on the basis of their leadership in their fields, and have enrolled 146 students in the Bredesen Center for Interdisciplinary Research and Graduate Education since its founding in 2010. Industry and technology transfer partnerships increase the Lab's economic impact, speed deployment of ORNL-developed technologies, and strengthen innovation ecosystems regionally and nationally.

- US Patents from September 2006 to September 30, 2017: 687

- Active licenses as of September 30, 2017: 146



Research and Development Highlights

Recent achievements from more than 70 years of scientific and technical contributions at ORNL include the following.

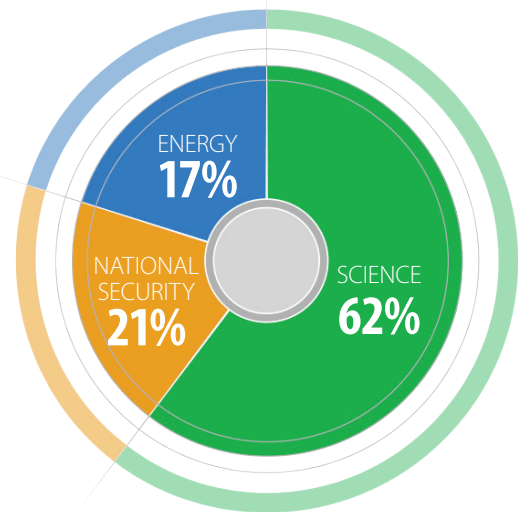
- Applying nuclear physics and nuclear engineering expertise to the discovery of element 117, named tennessine
- Restoring the nation's ability to produce plutonium-238 for deep space missions
- Producing the largest solid 3D-printed item
- Discovering an electrochemical process that converts carbon dioxide directly into ethanol
- Revealing a new molecular state of water using neutron scattering and computational modeling



Research and Development Facilities

World-class facilities that support ORNL research and development activities, including the following, are also available to users from universities, industry, and other institutions.

- Building Technologies Research and Integration Center
- Carbon Fiber Technology Facility
- Center for Nanophase Materials Sciences
- Center for Structural Molecular Biology
- High Flux Isotope Reactor
- Manufacturing Demonstration Facility
- National Transportation Research Center
- Oak Ridge Leadership Computing Facility
- Spallation Neutron Source



ORNL research and development programs address the mission needs of DOE and other federal and nonfederal sponsors.

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