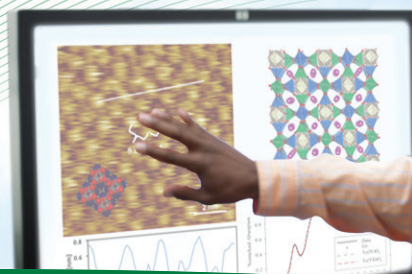




"I am excited for
the next journey,
the next question."

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) 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 promotes multidisciplinary and multi-institutional teams whose collaborations transform fundamental research into new technologies and applications. Building on signature strengths in neutron scattering, high-performance computing, advanced materials, and nuclear science and engineering, ORNL's research and development portfolio includes

- 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 science.
- Sustainable solutions for buildings, energy, and manufacturing.
- 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.

4,750

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

\$1.4 billion

2016 expenditures



Partnerships and Collaborations

ORNL's partnerships expand capabilities and create scientific and educational opportunities for students and faculty at all levels. Among its collaborations, ORNL leads two major multi-institutional partnerships: the BioEnergy Science Center, one of three DOE Bioenergy Research Centers, and the Consortium for Advanced Simulation of Light Water Reactors, a DOE Energy Innovation Hub. ORNL is 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. ORNL and the University of Tennessee employ more than 200 joint faculty, including 15 Governor's Chairs recruited due to their leadership in their fields, and have enrolled 127 students in the Bredesen Center for Interdisciplinary Research and Graduate Education since its founding in 2010.

• US patents issued since September 30, 2006: 665

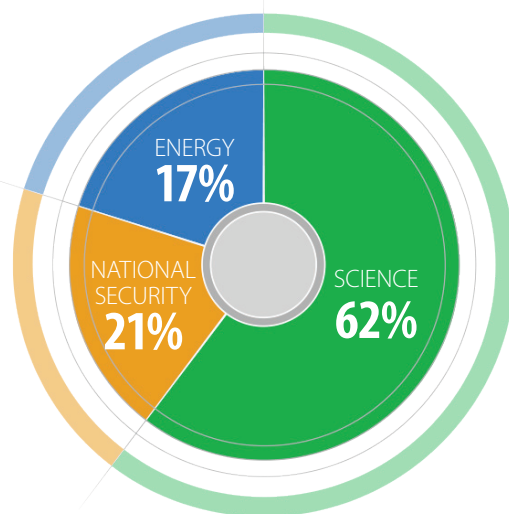
• Active licenses as of September 30, 2016: 149



Research and Development Highlights

Among the most recent achievements in ORNL's more than 70 years of contributions to science, ORNL has

- Applied nuclear and physics expertise to the discovery of element 117, named tennessine.
- Demonstrated the nation's ability to produce plutonium-238 for deep space missions.
- Received the Guinness World Records title for producing the largest solid 3-D printed item.
- Discovered an electrochemical process that converts carbon dioxide directly into ethanol.
- Revealed a new molecular state of water using neutron scattering and computational modeling.



ORNL research primarily supports three key program areas on behalf of DOE.



Research and Development Facilities

Nine world-class facilities that support ORNL's R&D 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

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