

ATPESC 2017

Argonne National Laboratory Tour Highlights

Argonne National Laboratory seeks solutions to pressing national problems in science and technology. The nation's first national laboratory, Argonne conducts leading-edge basic and applied scientific research in virtually every scientific discipline. Argonne researchers work closely with researchers from hundreds of companies, universities, and federal, state and municipal agencies to help them solve their specific problems, advance America's scientific leadership and prepare the nation for a better future. With employees from more than 60 nations, Argonne is managed by the UChicago Argonne, LLC for the U.S. Department of Energy's Office of Science.

The Argonne Leadership Computing Facility (ALCF) provides its user community with computing time and staff support to pursue significant breakthroughs in science and engineering. The ALCF is one of two Department of Energy leadership computing facilities in the nation dedicated to open science. The Visualization Laboratory is home to a variety of different display devices where visitors can see the output of the latest simulations, from blood flow in the brain to the evolution of the universe on a 66 million-pixel, 27-foot long display wall showing the results of both simulations by Argonne scientists and data collected from Argonne experiments.

The Advanced Photon Source (APS) at Argonne National Laboratory is an Office of Science user facility funded by the U.S. Department of Energy. The APS is one of the most technologically complex machines in the world. This premier national research facility provides the ultra-bright high-energy X-ray beams to more than 5,700 scientists each year from every U.S. state, the District of Columbia, and Puerto Rico, and many countries around the world. These scientists come to the APS from academia, industry, medical schools, and other research institutions to carry out experiments that promise new discoveries in nearly every scientific discipline, including materials science; life science; chemistry; environmental, geological, and planetary science; and physics. The X-ray beams provided by this remarkable facility enable the collection of data in unprecedented detail and in amazingly short time frames. The knowledge these researchers gain at the APS has a real and positive impact on our technologies, our health, our economy, and our fundamental understanding of the materials that make up our world.

The Argonne Tandem Linac Accelerator System (ATLAS) is the world's first ion accelerator using superconducting devices for the energy gain. It is capable of accelerating ions of all elements, both stable and radioactive, from hydrogen to uranium for research into the properties of the nucleus, the core of matter, the fuel of stars.

The Nuclear Energy Discovery Center showcases Argonne's rich heritage in the development of nuclear reactors and its current role in the development of next-generation reactors and fuel cycle technologies. Argonne has over 70 years of leadership in nuclear science and technology, tracing its birth to Enrico Fermi's Manhattan Project. Argonne pioneered the development of peaceful uses of nuclear technology, including those used in major nuclear power plants throughout the world. The laboratory continues to advance the design and operation of nuclear energy systems and is applying its nuclear energy-related expertise to current and emerging programs of national and international significance. Visitors to the exhibit will learn about the development of nuclear power generation, from the Manhattan Project outcome, to Argonne's physics experiments and analyses that were commercialized into current nuclear power reactors, and then on to the advanced reactor systems that are the focus of modern-day research and development at Argonne.