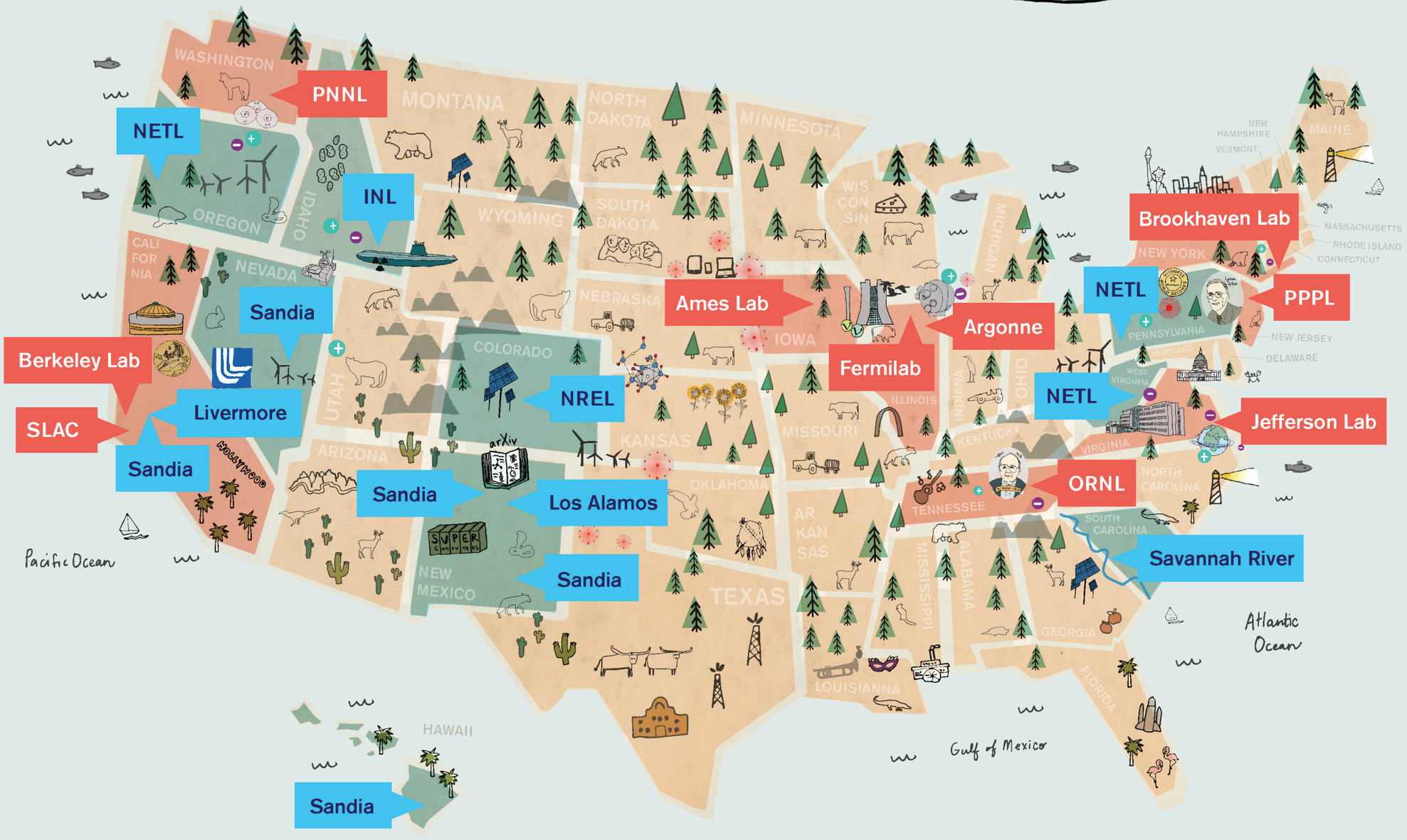
Department of ENERGY NATIONAL LABORATORIES



Legend

- DOE Laboratories
- DOE Office of Science Laboratories

The US Department of Energy has nurtured hubs of innovation in the United States for more than eight decades. Discoveries made at the national laboratories have saved lives, solved mysteries of nature, improved products, transformed industries and served as a training ground for students who go on to pursue careers in science. Ten of the 17 institutions fall under the purview of the DOE Office of Science, the single largest supporter of basic research in the physical sciences in the United States.

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Department of Energy NATIONAL LABORATORIES

The Ames Laboratory

location Ames, Iowa
opened 1947
lab colors
employees 450 employees

areas of research
materials sciences and engineering; chemical and biological sciences; applied math and computational sciences; environmental and protection sciences; and simulation, modeling and decision science

did you know?
Ames researchers developed lead-free solder, an alloy of tin-silver-copper that is environmentally benign and has been widely adopted by the electronics industry as a universal bonding agent in all types of electronic devices from smart phones to computers.

animals on site
brown squirrels and chipmunks

Argonne National Laboratory

location Lemont, Illinois
opened 1946
lab colors
employees 3,500 employees
5,000 users/year

areas of research
physics, chemistry, biological sciences, energy storage, high-performance computing, national security, engines and alternative fuels, environmental science and nuclear energy

did you know?
Argonne scientists recorded the world's first neutrino in a hydrogen bubble chamber on November 13, 1970.

animals on site
white-tailed deer, coyotes, herons, egrets, beavers, snapping turtles and geese

Brookhaven National Laboratory

location Upton, New York
opened 1947
lab colors
employees 3,000 employees
4,000 users/year

areas of research
nuclear and particle physics; photon sciences and nanomaterials; and cross disciplinary research on climate change, sustainable energy and Earth's ecosystems

did you know?
Brookhaven's Relativistic Heavy Ion Collider holds a Guinness World Record for producing the highest man-made temperature—4 trillion degrees Celsius—while recreating conditions of the early universe in near light-speed particle smashups.

animals on site
eastern hog-nosed snakes—they play dead—endangered tiger salamanders, deer, turkeys, foxes and groundhogs

Fermi National Accelerator Laboratory

location Batavia, Illinois
opened 1967
lab colors
employees 1,700 employees
4,600 users/year

areas of research
particle physics and accelerator science and technology

did you know?
Fermilab built the first proton accelerator dedicated to the treatment of cancer patients in a hospital, the Loma Linda Medical Center in California.

animals on site
American bison, coyotes, geese and 285 other bird species

Idaho National Laboratory

location Southeast Idaho
opened 1949
lab colors
employees 3,500 employees

areas of research
nuclear science and engineering; national security research and testing; energy and environmental sustainability

did you know?
The technology for the world's first nuclear-powered submarine was pioneered in the desert of Idaho. From 1953 to 1994, thousands of sailors trained there using full-scale submarine prototype reactors.

animals on site
sage grouse, pygmy rabbits, pronghorn, mule deer, elks, coyotes, bobcats, rattlesnakes, bears, moose, mountain lions and wolves

Lawrence Livermore National Laboratory

location Livermore, California
opened 1952
lab colors
employees 6,500 employees

areas of research
nuclear weapons stockpile stewardship, nuclear nonproliferation, high performance computing, national security, biology, energy research, climate science, additive manufacturing, lasers and high-energy-density physics

did you know?
Star Trek Into Darkness was filmed at the lab's National Ignition Facility.

animals on site
red-legged frogs (a protected species), coyotes, wild turkeys and the occasional mountain lion

Los Alamos National Laboratory

location Los Alamos, New Mexico
opened 1943
lab colors
employees 10,000 employees
1,200 users/year

areas of research
accelerators and electrodynamics; bioscience, biosecurity and health; chemical science; Earth and space sciences; energy; engineering; high-energy-density plasmas and fluids; information science, computing and applied math; materials science; national security and weapons science; nuclear and particle physics; astrophysics and cosmology; and sensors and instrumentation systems

did you know?
A Los Alamos theorist created the arXiv, a free archive of scientific journal article preprints that revolutionized communications within the scientific community, in 1991. Today, arXiv contains close to 800,000 full texts, receives 83,000 new texts each year, and serves about 400,000 distinct users every week.

animals on site
southwestern willow flycatchers, spotted owls, jemez mountain salamanders, black bears, elk, deer, bobcats, cougars and coyotes

Lawrence Berkeley National Laboratory

location Berkeley, California
opened 1931
lab colors
employees 4,000 employees
8,500 users/year

areas of research
physics, chemistry, nuclear science, accelerator research, photon science and engineering sciences; computational research and mathematics; earth sciences; energy efficiency; materials sciences; and life sciences, genomics, and physical biosciences

did you know?
Berkeley Lab claims 13 Nobel prizes: 10 for work done here, 2 for work by lab scientists who did the work elsewhere, and 1 for a large contingent of lab scientists who were members of the Intergovernmental Panel on Climate Change that shared the 2007 Peace Prize.

did you know?
mountain lions, foxes and turkeys

National Energy Technology Laboratory

location Albany, Oregon; Pittsburgh, Pennsylvania; and Morgantown, West Virginia
opened 1910
lab colors
employees 1,500 employees

areas of research
high-efficiency boilers, turbines, fuel cells and other power systems; emissions controls for coal-fired power plants; carbon capture and storage; efficiency and environmental quality of domestic oil and natural gas exploration, production and processing; and materials for extreme environments

did you know?
The United States has reduced its NO_x emissions 88 percent and SO_2 emissions 82 percent since 1970, essentially eliminating acid rain. Major contributors to these reductions have been the scrubbers, low-NO_x burners and selective catalytic reduction systems demonstrated through the clean coal programs managed by NETL.

animals on site
fairy diddles, red foxes, wild turkeys, white-tailed deer and the occasional raccoon

National Renewable Energy Laboratory

location Golden, Colorado
opened 1977
lab colors
employees 2,500 employees

areas of research
renewable energy and energy efficiency research and development, including energy systems integration, solar, wind, renewable fuels and vehicle systems, buildings, geothermal, energy sciences, computational sciences and energy analysis

did you know?
Laboratory-designed solar cells powered the first two Mars rovers, Spirit and Opportunity; the solar cells' durability extended the rovers' lifetimes beyond predictions.

animals on site
mule deer, coyotes, foxes, raccoons, rabbits, mountain lions, American kestrels and red-tailed hawks

Oak Ridge National Laboratory

location Oak Ridge, Tennessee
opened 1943
lab colors
employees 4,400 employees
3,000 users/year

areas of research
energy-related science and technology, from basic research to the development and demonstration of breakthrough materials, processes and systems

did you know?
The 1994 Nobel Prize in physics was awarded to Clifford Shull for neutron diffraction techniques developed at ORNL's Graphite Reactor, the world's first continuously operating nuclear reactor. Today at ORNL and other labs around the world, neutron diffraction is used to reveal the underlying structure of materials and to create new materials for use in energy technologies, electronics and many other areas.

animals on site
black bears, groundhogs, deer, raccoons, water snakes, turkeys, snapping turtles, ospreys, bobcats and coyotes

Pacific Northwest National Laboratory

location Richland, Washington
opened 1965
lab colors
employees 4,500 employees
800 users/year

areas of research
chemical and molecular sciences; biological systems science; climate change science; subsurface science; chemical engineering; applied materials science and engineering; and applied nuclear science and technology

did you know?
In the early 1970s, PNNL invented a technique called optical digital recording that stores information as a track of dots about one micron in diameter. This innovation served as the critical design element for compact discs and players, later manufactured and sold worldwide.

animals on site
cottontail rabbits, red foxes, jackrabbits, coyotes and several species of waterfowl and birds of prey

Princeton Plasma Physics Laboratory

location Plainsboro, New Jersey
opened 1951
lab colors
employees 450 employees
300 users/year

areas of research
nuclear fusion and plasma physics

did you know?
Laboratory founder Lyman Spitzer conceived of the laboratory during a Colorado ski trip after being inspired by thoughts of fusion as a boundless source of energy for generating electricity. The laboratory was founded as a classified facility under the code name "Project Matterhorn" in 1951; it was declassified in 1958 when it halted bomb research and became the Princeton Plasma Physics Laboratory in 1961.

animals on site
wild turkeys

Sandia National Laboratories

location Albuquerque, New Mexico; Livermore, California; Tonopah, Nevada; Carlsbad, New Mexico; Kauai, Hawaii
opened 1945
lab colors
employees 10,000 employees

areas of research
nuclear weapons; defense; energy; materials science and homeland security; nonproliferation; supercomputing and cybersecurity; robotics; climate and infrastructure security; nuclear reactor safety; nanodevices and microsystems; geosciences; bioscience; radiation effects; and nuclear fusion

did you know?
The "clean room" technology essential to every microelectronics fabrication plant and hospital surgery facility today was invented and patented for free use by Sandia engineers in 1961.

animals on site
greater roadrunners

Savannah River National Laboratory

location near Aiken, South Carolina
opened 1951
lab colors
employees 825 employees

areas of research
environmental remediation and risk reduction; nuclear materials processing and disposition; nuclear detection, characterization and assessments; gas processing, storage and transfer systems

did you know?
To support US nonproliferation efforts, SRNL has been involved in repatriation efforts for proliferant nuclear materials from around the world; in 2012, SRNL earned White House recognition for a three-year project to remove plutonium from Sweden for secure disposition in the United States.

animals on site
alligators, white-tailed deer, wild turkeys and wild hogs

SLAC National Accelerator Laboratory

location Menlo Park, California
opened 1962
lab colors
employees 2,000 employees
3,400 users/year

areas of research
accelerator research; astrophysics and cosmology; biology; elementary particle physics; environmental science; materials, chemistry and energy sciences; scientific computing; and X-ray science

did you know?
At 3,073.72 meters (1.9 miles), the housing for SLAC's linear accelerator is one of the longest buildings on Earth.

animals on site
black-tailed deer, great horned owls and gopher snakes

Thomas Jefferson National Accelerator Facility

location Newport News, Virginia
opened 1984
lab colors
employees 800 employees
1350 users/year

areas of research
experimental nuclear physics, computational and theoretical nuclear physics, accelerator science, cryogenics, superconducting radio frequency technologies, radiation detectors, medical imaging devices and free-electron lasers

did you know?
An electron beam travels around Jefferson Lab's accelerator five times in about 22 millionths of a second. At that speed, the electron beam could circle the Earth 7.5 times in one second.

animal on site
deer

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