

DEPARTMENT OF ENERGY NATIONAL LABORATORIES



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AMES NATIONAL LABORATORY

Location: Ames, Iowa
Areas of Research: materials sciences and engineering; condensed matter physics; chemical and biological sciences; critical and rare earth materials; technology transfer for manufacturing and industry; clean energy innovation
Year Opened: 1947
Lab Colors: blue and orange
Number of Employees: 457
Number of Users: n/a
Number of Countries Represented by Employees/Users: 35

Fun Fact: Ames is the only national laboratory physically located on the campus of a major research university, Iowa State University.

Animals on Site: fox squirrels, eastern chipmunks
Size of Lab Campus: 10 acres
Origin of Name: Ames National Laboratory is named after the city in which it resides, and also after the Ames Project, an effort led by scientists at Iowa State University to purify uranium for the Manhattan Project during WWII.



ARGONNE NATIONAL LABORATORY

Location: Lemont, Illinois
Areas of Research: artificial intelligence; quantum mechanics; energy storage; transportation; nuclear science; climate; carbon management; renewable energy; X-ray science
Year Opened: 1946
Lab Colors: green, red and blue
Number of Employees: 3,723
Number of Users: 8,000
Number of Countries Represented by Employees/Users: not tracked

Fun Fact: Argonne became the United States' first national laboratory when the federal government charged it with pursuing "cooperative research in nucleonics" on July 1, 1946.

Animals on Site: white-tailed deer, coyotes, herons, egrets, beavers, snapping turtles, geese
Size of Lab Campus: 1,700 acres
Origin of Name: ANL grew out of a Manhattan Project effort to build the world's first controlled, self-sustaining nuclear reaction. Once it was achieved, the project was relocated from the University of Chicago to a less-populated area near Argonne Forest.



BROOKHAVEN NATIONAL LABORATORY

Location: Upton, NY
Areas of Research: nuclear and high-energy physics; clean energy and climate; quantum computing; AI; microelectronics; isotope production; accelerator science and technology
Year Opened: 1947
Lab Colors: teal, cerulean, lime, orange and fuchsia
Number of Employees: 2,900
Number of Users: 3,600
Number of Countries Represented by Employees/Users: 121

Fun Fact: The first video game, Tennis for Two (a precursor to "Pong"), was invented by a Brookhaven scientist in 1958 to entertain attendees of the lab's open house.

Animals on Site: deer, turkey, geese, box tortoises
Size of Lab Campus: 5,300 acres
Origin of Name: The lab is named after the town of Brookhaven—founded circa 1655—in which it is partially located.



FERMI NATIONAL ACCELERATOR LABORATORY

Location: Batavia, Illinois
Areas of Research: high-energy particle physics; quantum physics
Year Opened: 1967
Lab Colors: blue and orange; red, gold and green
Number of Employees: 2,160
Number of Users: 2,395
Number of Countries Represented by Employees/Users: 92 (by user citizenship), 34 (by institution)
Fun Fact: The bottom and top quarks were discovered at Fermilab in 1977 and 1995.

Animals on Site: a herd of American plains bison, many species of birds, Blanding's turtles, Smooth green snakes, fish, butterflies, dragonflies
Size of Lab Campus: 6,800 acres
Origin of Name: Originally called National Accelerator Laboratory, the lab was renamed Fermi National Accelerator Laboratory in 1974 in honor of physicist Enrico Fermi.



IDAHO NATIONAL LABORATORY

Location: Idaho Falls, Idaho
Areas of Research: nuclear science and engineering; national security research and testing; energy and environmental sustainability
Year Opened: 1949
Lab Colors: dark blue, light blue and bright green
Number of Employees: 6,100+
Number of Users: not provided
Number of Countries Represented by Employees: 51

Fun Fact: The National Reactor Testing Station—the forerunner to today's INL—was home to the Experimental Breeder Reactor-I, the first nuclear reactor built in Idaho. On December 20, 1951, EBR-1 became the first power plant in the world to produce electricity using atomic energy.

Animals on Site: sage grouse, pygmy rabbits, pronghorn, mule deer, elk, coyotes, bobcats, rattlesnakes, moose, mountain lions, wolves, bats, skunks, raccoons, falcons, owls
Size of Lab Campus: 890 square miles, plus facilities in Idaho Falls
Origin of Name: The lab earned its name after a 2005 restructuring that resulted in new facilities and increased capabilities across the state of Idaho.



LAWRENCE BERKELEY NATIONAL LABORATORY

Location: Berkeley, California
Areas of Research: artificial intelligence; accelerator technologies; astrophysics; computing, materials, and chemicals sciences; microelectronics; alternative energy; bioenergy and biofuels; biomanufacturing; carbon management; energy efficiency and storage; decarbonization; Earth and ecological sciences; quantum computing
Year Opened: 1931
Lab Colors: blue and white
Number of Employees: 3,804 full-time employees
Number of Users: 16,350 facility users
Number of Countries Represented by Employees/Users: not tracked

Fun Fact: Each year, hundreds of goats descend upon the lab to munch through brush for fire mitigation, delighting employees and local news outlets.

Animals on Site: bobcats, deer, turkeys
Size of Lab Campus: 202 acres
Origin of Name: Both Lawrence Berkeley National Laboratory and Lawrence Livermore National Laboratory are named after their founder, Ernest Orlando Lawrence. In the 1950s, what began as the Ernest O. Lawrence Radiation Laboratory branched into two facilities, which after Lawrence's death became the Ernest O. Lawrence Radiation Laboratory—Berkeley, and the Lawrence Radiation Laboratory—Livermore. In 1995, the lab in Berkeley was renamed Ernest Orlando Lawrence Berkeley National Laboratory, which was ultimately shortened to Lawrence Berkeley National Laboratory.



LAWRENCE LIVERMORE NATIONAL LABORATORY

Location: Livermore, California
Areas of Research: nuclear deterrence; advanced materials and manufacturing; bioscience and bioengineering; Earth and atmospheric science; high-energy-density science; high-performance computing, simulation and data science; lasers and optical science and technology; nuclear, chemical and isotopic science and technology
Year Opened: 1952
Lab Colors: blue
Number of Employees: 9,291
Number of Users: ~5,500
Number of Countries Represented by Employees/Users: 61

Fun Fact: Construction at Livermore of the National Ignition Facility—the world's most energetic laser—unearthed the bones of a mammoth. Later named Nifalupakus, or "Nifty," the mammoth became a part of the permanent collection at the UC Museum of Paleontology in Berkeley.

Animals on Site: 29 rare, protected or endangered species, including the California red-legged frog, California tiger salamander, western burrowing owl
Size of Lab Campus: 1 square mile
Origin of Name: Both Lawrence Berkeley National Laboratory and Lawrence Livermore National Laboratory are named after their founder, Ernest Orlando Lawrence. In the 1950s, what began as the Ernest O. Lawrence Radiation Laboratory branched into two facilities, which after Lawrence's death became the Ernest O. Lawrence Radiation Laboratory—Berkeley, and the Lawrence Radiation Laboratory—Livermore. The Livermore laboratory was eventually renamed Lawrence Livermore National Laboratory.



LOS ALAMOS NATIONAL LABORATORY

Location: Los Alamos, New Mexico
Areas of Research: The primary mission of Los Alamos is to provide scientific and engineering support to national security programs. Los Alamos performs R&D, design, maintenance and simulations in support of the nuclear weapons stockpile. The lab also performs theoretical and applied R&D in such areas as artificial intelligence, materials science, physics, environmental science, energy and health.
Year Opened: 1943
Lab Colors: ultramarine
Number of Employees: ~18,000
Number of Users: ~1,500
Number of Countries Represented by Employees/Users: not tracked

Fun Fact: In 1991, a Los Alamos theorist created the arXiv, a free archive of scientific journal article preprints that revolutionized communications within the scientific community. Today, arXiv contains close to 800,000 full texts, receives 83,000 new texts per year, and serves about 400,000 distinct users every week.

Animals on Site: deer, elk, mountain lions, black bears, bobcats, coyotes, owls, raccoons, salamanders, skunks
Size of Lab Campus: 40 square miles
Origin of Name: Originally called the Project Y, the lab was renamed Los Alamos Scientific Laboratory in 1947. The name changed to Los Alamos National Laboratory in 1981.



NATIONAL ENERGY TECHNOLOGY LABORATORY

Locations: Albany, Oregon; Pittsburgh, Pennsylvania; Morgantown, West Virginia
Areas of Research: carbon management; resource sustainability; computational science and engineering; energy conversion engineering; strategic systems analysis and engineering; materials engineering and manufacturing; geological and environmental systems
Year Opened: 1910
Lab Colors: green
Number of Employees: 1,700
Number of Users: n/a
Number of Countries Represented by Employees/Users: not tracked

Fun Fact: NETL has developed several groundbreaking innovations, including a metallic coronary stent, the first formulation of austenitic stainless steel; a technology to capture heavy metals from water supplies called multi-functional sorbent technology (MUST); a small optical sensing device called the LIBSense™ Sensor that can detect elements in the Earth's subsurface; and the Carbon Capture Simulation Initiative (CCSI) Toolset that helps maximize learning and reduces risk during the scale-up process for carbon-capture technologies.

Animals on Site: white-tailed deer, wild turkeys, red foxes, geese, squirrels, skunks, raccoons, coyotes, red-tailed hawks, turtles, snakes, groundhogs
Size of Lab Campus: 241 acres across three sites
Origin of Name: In 1999, Secretary of Energy Bill Richardson designated the Federal Energy Technology Center as the National Energy Technology Laboratory.



NATIONAL RENEWABLE ENERGY LABORATORY

Location: Arvada, Colorado; Golden, Colorado; Fairbanks, Alaska; Washington, DC
Areas of Research: full scope of renewable energy and energy-efficiency research, including solar power, wind power, water power, hydrogen, buildings sciences, geothermal, bioenergy, transportation, and grid modernization
Year Opened: 1977
Lab Colors: blue
Number of Employees: ~3,500
Number of Users: more than 1,100 active partnerships
Number of Countries Represented by Employees/Users: 70+
Animals on Site: mule deer, coyotes, foxes, raccoons, rabbits, mountain lions, American kestrels, red-tailed hawks
Size of Lab Campus: 632 acres across two Colorado sites, plus facilities in Fairbanks, Alaska, and Washington, DC

Origin of Name: NREL was founded as the Solar Energy Research Institute in 1977. President George H.W. Bush gave the lab its new name to recognize its focus on renewable energy when he designated it a national laboratory in 1991.



OAK RIDGE NATIONAL LABORATORY

Location: Oak Ridge, Tennessee
Areas of Research: computing and computational sciences; materials science; biological and environmental sciences; energy science and technology; isotope research, development and production; fission and fusion energy; neutron sciences; national security sciences
Year Opened: 1943
Lab Colors: green and white
Number of Employees: 7,000
Number of Users: 3,600+
Number of Countries Represented by Employees/Users: 75

Fun Fact: Oak Ridge scientists invented a first-of-its-kind aluminum device that reduces the amount of heat produced when carbon is captured from industrial smokestacks, enhancing the process of scrubbing carbon dioxide before it's emitted into the air.

Animals on Site: deer, turkeys, groundhogs, coyotes, foxes, fish, geese
Size of Lab Campus: 4,421 acres
Origin of Name: ORNL is named after the nearby city of Oak Ridge, Tennessee.



PACIFIC NORTHWEST NATIONAL LABORATORY

Location: Richland, Washington
Areas of Research: scientific discovery; sustainable energy; national security; decarbonization and grid resilience; energy storage; data science; biology
Year Opened: 1965
Lab Colors: copper and silver
Number of Employees: 6,089
Number of Users: 1,857
Number of Countries Represented by Employees/Users: varies

Fun Fact: PNNL developed the original holographic millimeter-wave scanning technology now used worldwide to screen passengers in airports.

Animals on Site: cottontail rabbits, red foxes, jackrabbits, coyotes, several species of waterfowl and birds of prey
Size of Lab Campus: 781 acres
Origin of Name: The lab is named after the geographic region of the Pacific Northwest.



PRINCETON PLASMA PHYSICS LABORATORY

Location: Princeton, New Jersey
Areas of Research: nuclear fusion; plasma physics
Year Opened: 1951
Lab Colors: orange and black
Number of Employees: ~800
Number of Users: 375
Number of Countries Represented by Employees/Users: 25
Fun Fact: The two 700-ton flywheels that power PPPL's National Spherical Torus Experiment-Upgraded (NSTX-U) could put a naval ship into orbit.
Animals on Site: deer, squirrels, birds, occasionally bears
Size of Lab Campus: 91 acres

Origin of Name: In 1951, Princeton University Professor of Astronomy Lyman Spitzer, Jr., proposed to the Atomic Energy Commission the idea to build a magnetic plasma device to study controlled fusion. Magnetic fusion research at Princeton began that year under the code name Project Matterhorn.



SANDIA NATIONAL LABORATORIES

Locations: Albuquerque, New Mexico; Livermore, California; Tonopah, Nevada; Carlsbad, New Mexico; Kauai, Hawaii; Washington, DC
Areas of Research: nuclear security enterprise systems integrator and engineering lab; nuclear deterrence; nuclear safety and nonproliferation; national and global security; energy and homeland security; advanced science and technology; cybersecurity; hypersonics; artificial intelligence; high-performance computing; advanced microelectronics; climate security; advanced manufacturing; threat intelligence analysis; biology; contested space; quantum computing; advanced sensing; anticipatory science; information science

Year Opened: 1945
Lab Colors: blue
Number of Employees: 16,800 employees, including students and postdocs
Number of Users: n/a
Number of Countries Represented by Employees/Users: not tracked

Fun Fact: Sandia scientists drew on their expertise in semiconductors, chemical reactor modeling and experimental and theoretical materials physics to establish the fundamental science behind LED lights, which use 75% less energy than incandescent bulbs. Lab researchers estimate the switch to these bulbs across the globe will reduce global greenhouse gas emissions by approximately 15 gigatons of carbon dioxide equivalent by 2050.

Animals on Site: mule deer, mountain lions, prairie rattlesnakes, silver-haired bats, ringtail, red-tailed hawks, greater roadrunners
Size of Lab Campus: 20,500 acres across all locations; 13,724 acres at the main Albuquerque campus

Origin of Name: The name "Sandia," the Spanish word for "watermelon," is the name of the mountain range in Albuquerque, New Mexico. Some say Spanish settlers named the mountains for their rosy-pink glow at sunset, while others think the name originated when they saw the squash gourds grown by the Indigenous people in the area.



SAVANNAH RIVER NATIONAL LABORATORY

Location: Aiken, South Carolina
Areas of Research: environmental remediation and risk reduction; nuclear materials processing and disposition; nuclear detection, characterization and assessments; gas processing, storage and transfer systems
Year Opened: 1951
Lab Colors: blue and white
Number of Employees: ~1,400
Number of Users: n/a
Number of Countries Represented by Employees/Users: not tracked

Fun Fact: SRNL is the only national laboratory sponsored by the DOE's Office of Environmental Management.

Animals on Site: alligators, white-tailed deer, wild turkeys, wild hogs
Size of Lab Campus: 39 acres, within the larger Savannah River Site of 198,046 acres (310 square miles)
Origin of Name: The lab takes its name from the larger Savannah River Site on which it sits, which is named after the 301-mile Savannah River that makes up most of the border between South Carolina and Georgia.



SLAC NATIONAL ACCELERATOR LABORATORY

Location: Menlo Park, California
Areas of Research: accelerator research; astrophysics and cosmology; biology; elementary particle physics; environmental science; materials, chemistry and energy sciences; scientific computing; X-ray science
Year Opened: 1962
Lab Colors: red
Number of Employees: 1,800+
Number of Users: 1,500
Number of Countries Represented by Employees/Users: 55

Fun Fact: Though SLAC does not employ paleontologists, the lab's first scientific discovery was a fossil, found during excavations for a linear accelerator tunnel in 1964. Called *Neoparadoxia repennini*, it lived 14 million years ago and resembled a hippo.
Animals on Site: black-tailed deer, great horned owls, gopher snakes
Size of Lab Campus: 426 acres
Origin of Name: SLAC was named after its 2-mile-long linear accelerator, the original particle physics project on the lab's campus.



THOMAS JEFFERSON NATIONAL ACCELERATOR FACILITY

Location: Newport News, Virginia
Areas of Research: experimental nuclear physics; computational and theoretical nuclear physics; advanced computer science visualization and data science; accelerator science and technologies; mechanical and systems engineering design and integration; biomedical research technologies
Year Opened: 1984
Lab Colors: red and black
Number of Employees: 935
Number of Users: 1,904
Number of Countries Represented by Employees/Users: 43

Fun Fact: Jefferson Lab's Continuous Electron Beam Accelerator Facility was the first large-scale installation of superconducting radio-frequency particle accelerator technology, the foundational technology for many of the most advanced particle accelerators and light sources in operation today.

Animals on Site: otters, deer, great blue herons, groundhogs
Size of Lab Campus: 214 acres
Origin of Name: The lab was named after Thomas Jefferson: US president, prominent Virginian, avid inventor and amateur scientist.

