

Nuclear and chemical sciences

with a global impact

Start your journey in a collaborative research environment, where you can tailor your research trajectory to fit your interests.

Discover your mission. Are you passionate about exploring nuclear and particle physics—diving into the building blocks of matter? Do you want to explore our solar system and phenomena in space? Do environmental challenges inspire you to dig in and foster climate resilience? Do you want to address high-priority national security challenges related to nuclear deterrence and homeland security? Our mission space is broad, and it continues to evolve.

Find your team. Nuclear and chemical science experts play key roles on team-based research projects at LLNL. For example, they:

Examine extraterrestrial material, including meteorites and samples returned from lunar missions, and leverage sophisticated experimental tools to study dark matter.

Engage in isotope-enabled environmental research, such as fostering carbon sequestration in soil and helping ensure the availability of freshwater resources.

Study nuclear matter under extreme conditions—from the origins of the first nuclei after the big bang, to the nucleosynthesis in stellar cauldrons and neutron star mergers.

Search for rare decays and new particles, and unlock the hidden secrets of neutrinos.

Analyze nuclear reactions to support fusion energy research and enable higher-fidelity nuclear physics simulations.

Leverage LLNL's nuclear forensic capabilities to detect and assess threats, implement safeguards, and deter terrorism.

Build connections. Our research environment is designed to foster collaboration. LLNL research teams bring together experts from multiple disciplines (e.g., data scientists, carbon cycle experts, materials scientists, astrophysicists, and nuclear engineers), as well as collaborators from other institutions.

Access unique resources. Our scientists leverage LLNL's cutting-edge experimental and computational resources to drive innovation.

Forensic Science
Center

LLNL
accelerator
complex

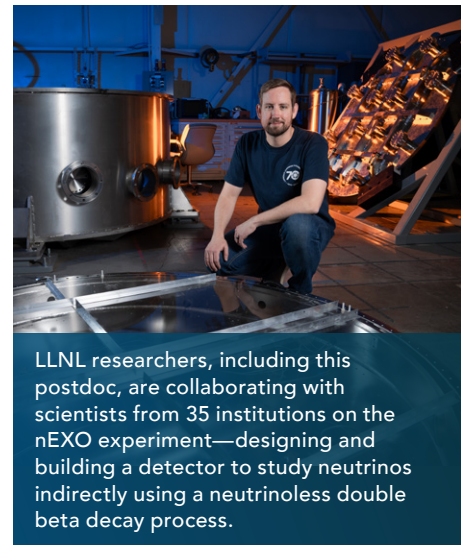
LLNL
radiochemistry
complex

Nuclear
Counting
Facility

Center for
Accelerator Mass
Spectrometry

National
Ignition
Facility

World-class
supercomputers



LLNL researchers, including this postdoc, are collaborating with scientists from 35 institutions on the nEXO experiment—designing and building a detector to study neutrinos indirectly using a neutrinoless double beta decay process.

Through partnerships with other institutions, our scientists expand the scope and impact of their research—including opportunities to use world-class research capabilities, such as:

- The Facility for Rare Isotope Beams, which generates unstable isotopes used in LLNL's nuclear reaction experiments.
- Unique accelerator facilities, including the Electron-Ion Collider and the Large Hadron Collider.
- The Triangle Universities Nuclear Laboratory, which operates the Duke Free Electron Laser Laboratory.
- NASA's OSIRIS-Rex mission, the first U.S. mission to collect a sample from an asteroid.



Scientist prepares samples for isotopic analysis by noble gas mass spectrometry.

Explore new pathways, personalizing your journey to focus on the work you value most.



Boost your skills. Lifelong learning is front and center at LLNL. Employees benefit from opportunities to attend seminars, gain new technical skills, take courses, or complete a certificate program. You can also receive coaching from experts in areas such as enhancing presentation skills, developing research proposals, and boosting project management skills.



Lead projects. LLNL provides an ideal environment for early-career staff and postdocs to develop as principal investigators. For example, they can apply for internal funding to lead a feasibility study or guide a small research team through an exploratory study. Project leaders receive guidance regarding managing project budgets and deliverables, hiring interns or postdocs, establishing collaborator agreements, participating in mid-term project reviews, and writing final project reports.



Embark on new challenges. Throughout your career at LLNL, you will have opportunities to take on new challenges, whether it's a new research area, a new mission focus, or a new leadership role. Examples include serving as a mentor, fostering new research collaborations, or leading a research group. Our staff also take on short-term assignments at LLNL, federal agencies, or universities. New opportunities make LLNL a great place to work and grow throughout your career.

Learn more

Explore our research areas or contact a group leader.



Scan code for more info.



Are you ready to start your journey at LLNL?

Educational degree. Our scientists come from a variety of backgrounds, and our research teams include experts in nuclear physics, particle physics, astrophysics, radiochemistry, cosmochemistry, forensic science, and nuclear theory. Connect with us to explore how your knowledge, skills, and experience (including military experience) might be a great fit for an open position at LLNL.

Expand your toolkit after joining LLNL. Innovation is often sparked through new perspectives. With this in mind, we aren't looking for the "perfect" job candidate who already has every skill we need. In fact, because LLNL missions often demand expertise in non-traditional fields of study, such as actinide behavior, isotope geochemistry, and rare-event detection, many essential skills and competencies are gained after joining LLNL, through mentorship, on-the-job-training, and personal discovery.

You'll learn throughout your career at LLNL as you serve on multidisciplinary research teams. For example, you'll have opportunities to collaborate with Lab experts who develop new detection tools, such as quantum instruments. You can also gain insight from LLNL staff who develop analytical tools that leverage the power of artificial intelligence and machine learning, and you can serve on research teams that are exploring new ways to use these powerful tools.

We're hiring!

pls.llnl.gov/careers