

LECM 2025 Resolutions



August 15, 2025

LECM 2025 Preamble

“Nuclear physics addresses the fundamental science questions of our time, produces a workforce that addresses critical national needs, provides synergies with other fields of science and technology, and enables high-impact applications that benefit society.” (LRP23)

LECM Resolution #1

The highest priority for low-energy nuclear physics and nuclear astrophysics research is to maintain U.S. world leadership in nuclear science by capitalizing on recent investments. To this end, we strongly support:

- Robust theoretical and experimental research programs and the development and retention of a highly skilled workforce;
 - The optimal operation of the FRIB and ATLAS national user facilities;
 - Investments in the ARUNA facilities, and key national laboratory facilities;
 - The FRIB Theory Alliance and all its initiatives.
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- All are critical to fully realize the scientific potential of the field and foster future breakthroughs.

LECM Resolution #2

- The science case for an energy upgrade of FRIB to 400 MeV/u is compelling. FRIB400 greatly expands the opportunities in the field. We strongly endorse starting the upgrade to harness its significant discovery potential. We support instrument developments, including the FDS and ISLA, now that HRS is underway. These community devices are important to realize the full scope of scientific opportunities.

LECM Resolution #3

Computing is essential to advance all fields of nuclear science. We strongly support enhancing opportunities in computational nuclear science to accelerate discoveries and maintain U.S. leadership by:

- Strengthening programs and partnerships to ensure the efficient utilization of new high-performance computing (HPC) hardware and new capabilities and approaches offered by artificial intelligence/machine learning (AI/ML) and quantum computing (QC);
- Establishing programs that support the education, training of, and professional pathways for a multidisciplinary workforce with cross-disciplinary collaborations in HPC, AI/ML, and QC;
- Expanding access to dedicated hardware and resources for HPC and new emerging computational technologies, as well as capacity computing essential for many research efforts

LECM Resolution #4

- Research centers are important for low-energy nuclear science. They facilitate strong national and international communications and collaborations across disciplines and across theory and experiment. Interdisciplinary centers are particularly essential for nuclear astrophysics to seize new scientific opportunities in this area. We strongly endorse nuclear astrophysics centers such as CeNAM and CIRCONIA that fulfill this vital role and propel innovation in the multi-messenger era.

LECM Resolution #5

Nuclear data play an essential role in all facets of nuclear science. Access to reliable, complete and up-to-date nuclear structure and reaction data is crucial for the fundamental nuclear physics research enterprise, as well as for the successes of applied missions in the areas of defense and security, nuclear energy, space exploration, isotope production, and medical applications. It is thus imperative to maintain an effective US role in the stewardship of nuclear data.

- We endorse support for the compilation, evaluation, dissemination, and preservation of nuclear data and efforts to build a highly skilled workforce that maintains reliable and up-to-date nuclear databases through national and international partnerships.
- We recommend prioritizing opportunities that enhance the prompt availability and quality of nuclear data and its utility for propelling scientific progress in nuclear structure, reactions, and astrophysics and other fundamental physics research programs.
- We endorse identifying interagency-supported crosscutting opportunities for nuclear data with other programs, that enrich the utility of nuclear data in both science and society.

Isotopes and Applications

- Applied Nuclear Science offers many tangible benefits to the United States and to the world. The Low Energy Nuclear Physics Community recognizes the societal importance of applied research and strongly encourages support for this exciting and growing field with funding and beamtime allocations that enable the critical discovery science which will improve our lives and make us all safer.
- Rare isotopes are necessary for research and innovation and must be available.