Research Associate - Experimental Nuclear Science

The Facility for Rare Isotope Beams (FRIB) is a major new scientific user facility for nuclear science, funded by the U.S. Department of Energy Office of Science (DOE-SC), Michigan State University (MSU), and the State of Michigan, with operations supported by the DOE-SC Office of Nuclear Physics. FRIB will provide intense beams of rare isotopes (that is, short-lived nuclei not normally found on Earth). FRIB will be operational in 2022. FRIB will enable scientists to make discoveries about the properties of these rare isotopes in order to better understand the physics of nuclei, nuclear astrophysics, fundamental interactions, and applications for society.

At FRIB, rare-isotope beams will be produced and separated in-flight, and subsequently thermalized and reaccelerated to energies up to 6 MeV/u, by the ReAccelerator facility ReA3, a worldwide unique, state-of-the-art accelerator for rare-isotope beams. An upgrade to higher energies (ReA6) is presently under construction. When FRIB comes online, it will provide the highest possible intensity rare isotope beams as input to the ReA facility.

This position affords an exciting opportunity to become part of the world-class FRIB Laboratory, and to get in on the ground floor of an emerging scientific user facility that will expand nuclear science into a whole new realm of possibility.

Position overview

NSCL invites applications from outstanding candidates for multiple fixed-term research associate (postdoctoral researcher) positions in the area of experimental nuclear science, who will work with one or more of the research groups led by Professors Daniel Bazin (bazin@nscl.msu.edu), Hironori Iwasaki (iwasaki@nscl.msu.edu), Alexandra Gade (gade@nscl.msu.edu), and Sean N. Liddick (liddick@nscl.msu.edu).

Major position responsibilities

The successful candidates will have the unique opportunity to contribute to (i) the SOLARIS and AT-TPC projects expecting first beam from NSCL's ReA6 accelerator in 2021 (Bazin), (ii) the in-beam gamma-ray spectroscopy studies with a focus in excited-state lifetime measurements at ReA6 starting in 2021 (Iwasaki) or (iii) the fast-beam implantation and decay program (Liddick) and the (iv) in-beam gamma-ray spectroscopy and direct-reaction program with GRETINA@S800 (Gade), all of which have immediate data-analysis projects available and are extensively involved in the planning for early experiments at FRIB.

Qualifications

Required

- PhD in nuclear physics, nuclear and radiochemistry, nuclear astrophysics, or related field
- An ability to carry out independent and original research as demonstrated by published works in refereed journals and/or conference proceedings
- Demonstrated written and oral communication skills, as evidenced by published works and by presentations at conferences, workshops, scientific outreach, and other professional meetings
- Strong research interest, demonstrated in the cover letter, in at least one and preferably several of the following areas: Nuclear physics at energies near the Coulomb barrier, direct nuclear reactions, nuclear spectroscopy following reactions or decays, excited-state lifetime measurements, nuclear detector developments, large-scale data analysis and interpretation, simulations of complex experimental setups, and digital data acquisition
- The ability to handle export-controlled materials

Desired

- Demonstrable knowledge of experimental principles and techniques pertaining to nuclear spectroscopy involving charged-particle detection and/or gamma-ray spectroscopy
- Experience with computer programming for the purpose of acquiring and analyzing data and for comparison with model predictions
- Experience designing, building, and commissioning new experimental equipment

Benefits

MSU employees receive excellent benefits including health/dental plans, a generous retirement plan, and educational assistance.

How to apply

For immediate consideration, please visit careers.msu.edu and search for posting number **687327** and follow the application process.

MSU is committed to achieving excellence through cultural diversity. The university actively encourages applications and/or nominations of women, persons of color, veterans and persons with disabilities.

About FRIB, MSU, and the Greater Lansing community

FRIB construction is nearing completion. Upon start of user operation in 2022, FRIB will enable scientists to make discoveries about the properties of rare isotopes in order to better understand the physics of nuclei, nuclear astrophysics, fundamental interactions, and applications of rare isotopes to benefit society.

MSU is one of the largest university campuses in the U.S. with a beautiful campus of 5,300 tree-filled acres. It has 17 degree-granting colleges and is a center for academic and research activities as well as the arts and athletics.

The campus sits between Lansing (Michigan's capital city) and East Lansing. The Lansing area has a population of more than 460,000 and offers lovely suburban areas, loft condos and other urban living opportunities as well as easy-to-get-to rural areas. A symphony orchestra, excellent health care, many community and professional theatres, rivers, lakes, outdoor festivals, close access to large cities and Lake Michigan make for a near-perfect living environment.

MSU is an affirmative action, equal opportunity employer.