The **Facility for Rare Isotope Beams (FRIB)** will be a new national user facility for nuclear science, funded by the Department of Energy Office of Science (DOE-SC), **Michigan State University (MSU)**, and the State of Michigan. Under construction on the site of the **National Superconducting Cyclotron Laboratory (NSCL)** on the MSU campus and to be operated by MSU, FRIB will provide intense beams of rare isotopes (that is, short-lived nuclei not normally found on Earth). FRIB and NSCL will continue to 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.

Rare-isotope beams are produced and separated in-flight, presently at the NSCL Coupled Cyclotron Facility and in the future at FRIB, 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 supplant the Coupled Cyclotron Facility and 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 Project, and to get in on the ground floor of an emerging national user facility that will expand nuclear science into a whole new realm of possibility.

Position Overview and Major Position Responsibilities

The Beam Physicist will accomplish conceptual development, efficient implementation, and effective operation of advanced instrumentation systems of the Laboratory, including research and development on advanced instrumentation systems relevant to the future program of the Laboratory. The Beam Physicist will ensure that approved experiments with the reaccelerator (ReA) facility are successful and will coordinate with experimenters and ReA staff. The major position responsibilities include:

- Understand the physics as well as the facility support needed to prepare the experiment in the ReA experimental hall
- Prepare requirements for the beam delivered by ReA and verify that they are within ReA specifications for that beam line
- Help experimenters during the setting-up of their experiment
- Verify that experiments run accordingly to the approved plan, document experiences, and identify possible improvements
- Advise in preparing the beam and beamline for the experiment
- Verify that beam delivered is in accordance with requirements, perform beam measurements
- Perform research and development projects to enhance the performance of the reaccelerator facility and in particular develop new diagnostic equipment for rare isotope ion beams

Required Qualifications

- Ph.D. in physics or chemistry in the area of experimental nuclear science, accelerators, particle or high energy physics
- Three years of experience with particle beams, beam diagnostics, or low-energy nuclear science experimental devices
- Self-motivated and able to work well within a team
- Excellent communication, planning, and organizational skills
- Ability to work with export controlled technology
- Record of accomplishments in field of expertise

Desired Qualifications

- Experience with using ion optics codes
- Experience with accelerator beam transport systems, vacuum equipment, magnetic spectrometers, radiation detectors, nuclear physics electronics, or data acquisition systems

Benefits

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

How to Apply

For immediate consideration, please go **www.careers.msu.edu** search for posting number **547440** 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 person with disabilities.

About FRIB and MSU, and the East Lansing Community

FRIB is currently under construction and baselined at a total project cost of $730M. 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 5,000 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 350,000 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.