

**Job no:** 605848

**Work type:** Faculty/Academic Staff

**Major Administrative Unit / College:** Facility For Rare Isotope Beams

**Department:** Nat'l Superconducting Cyclotron Lab 10049216

**Salary:** Salary Commensurate with Experience

**Location:** East Lansing

**Categories:** Full Time (90-100%), Fixed Term Academic Staff, Research/Scientific, Non-Union

### Position Summary

The successful candidate will lead development and analysis of experimental data aimed at elucidating how nuclear matter assembles itself in systems ranging from unbound nuclei to neutron stars. The candidate is expected to take a leading role in performing an upcoming experiment to measure fission cross sections in exotic nuclei, as well as the development and testing of new equipment for this experiment. The candidate will also assist in the analysis of existing data on exotic decays of proton-rich nuclei.

NSCL is one of the world's flagship nuclear science research facilities. The Laboratory's research program is broad: fast, stopped, and reaccelerated beams of rare-isotopes are available to address key scientific questions concerning the creation of the elements in the cosmos, the limits of nuclear stability, the properties of nuclei with extreme neutron-to-proton ratios, and the equation of state of neutron-rich nuclear matter as it may exist inside neutron stars. Postdoctoral researchers play an important role in expanding, improving and utilizing the world-class experimental capabilities at the Laboratory. Experimentalists often work closely with theorists in the Laboratory and beyond and projects can involve high-performance computing.

NSCL is part of the [Facility for Rare Isotope Beam \(FRIB\)](#) Laboratory, which aspires to become the world's leading laboratory for education and research in rare isotope science, in accelerator science, and in applications of rare isotopes to meet societal needs. To realize this vision, the FRIB Laboratory builds on the expertise and the achievements of NSCL as it establishes FRIB, which will extend the frontier of nuclear science through unprecedented discovery potential.

Research Associate positions are typically for two years, depending on the availability of funds. Renewal for the second year is based on a performance evaluation. A third year is possible, subject to funding and satisfactory performance evaluations.

Besides the excellent research environment, the FRIB Laboratory offers a strong program for mentoring postdoctoral researchers in preparation for the next steps in their careers. You can read more in the [postdoc mentoring plan](#). Postdoctoral researchers play a role in running the Laboratory, from leading forefront research to serving on important committees. They help supervise students and, for those interested, there are opportunities to engage with teaching and outreach.

NSCL is funded by the National Science Foundation through the Nuclear Physics program of the NSF Physics Division to be a national user facility with a mission to provide beams of rare isotopes for researchers from around the world. Hundreds of users come to Michigan State University each year to take advantage of our facilities and explore the inner workings of atoms and their role in the universe.

The FRIB Laboratory is a major administrative unit within Michigan State University, comprised of NSCL and the FRIB Project. MSU is establishing FRIB as a scientific user facility with financial assistance from the Office of Nuclear Physics in the U.S. Department of Energy Office of Science (DOE-SC).

MSU is one of the largest university campuses in the United States 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 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 and 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. Job applicants are considered for employment opportunities and employees are treated without regard to their race, color, religion, sex, sexual orientation, gender identity, national origin, disability, or veteran status. The University actively encourages applications of women, persons of color, veterans, and persons with disabilities.

#### Required Degree

Doctorate -Nuclear Physics, Nuclear & Radiochemistry

#### Minimum Requirements

- PhD. in Nuclear Physics, Nuclear & Radiochemistry, Nuclear Astrophysics, or related fields
- High potential for excellence in research, as demonstrated through completed research projects and publications in peer-review journals
- Excellence in communication skills to present approaches, plans, and findings as evidenced by presentations at conferences, workshops, scientific outreach, and other professional meetings
- Strong interest in experiments studying fission, equation of state, or continuum spectroscopy demonstrated in their cover letter
- The ability to work with export-controlled technology

#### Desired Qualifications

- Demonstrable knowledge of principles and techniques pertaining to nuclear science and experimental research.
- Experience with computer programming for the purpose of acquiring and analyzing data and for the comparison with model predictions.

- Experience with simulations of experimental arrays through modeling software, such as GEANT4.

#### Required Application Materials

Applicants must include a cover letter highlighting their interest in and experience/expertise related to the open position in the research group of Prof. Brown, a Curriculum Vita including a complete list of publications and presentations, and contact information for three references.

#### Special Instructions

Review of applications will begin immediately and the search will continue until the position is filled. General questions regarding the position may be sent to the Associate Director for Experimental Research, Sean Liddick ([liddick@nscl.msu.edu](mailto:liddick@nscl.msu.edu)); specific research questions about this opportunity should be sent to Prof. Kyle Brown ([brownk@nscl.msu.edu](mailto:brownk@nscl.msu.edu)).

#### Review of Applications Begins On

10/02/2019

#### Website

[www.nscl.msu.edu](http://www.nscl.msu.edu)

#### MSU Statement

Michigan State University has been advancing the common good with uncommon will for more than 160 years. One of the top research universities in the world, MSU pushes the boundaries of discovery and forges enduring partnerships to solve the most pressing global challenges while providing life-changing opportunities to a diverse and inclusive academic community through more than 200 programs of study in 17 degree-granting colleges.