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**Facility for Rare Isotope Beams to open its doors to discovery**

*Ribbon-cutting ceremony May 2 includes Secretary of Energy*

EAST LANSING, Mich. – Michigan State University’s [Facility for Rare Isotope Beams](https://frib.msu.edu/), a user facility for the U.S. Department of Energy Office of Science, will open its doors to discovery with a ribbon-cutting ceremony on May 2. U.S. Secretary of Energy Jennifer M. Granholm and MSU President Samuel L. Stanley Jr., M.D., have invited guests to the event that will set the stage for beginning FRIB’s scientific mission.

FRIB will house the world’s most powerful heavy-ion accelerator, allowing researchers to access more than 1,000 new rare isotopes, many never before produced on Earth. Supporting a community of 1,600 scientists from around the world, FRIB will enable scientists to make discoveries about how the universe formed, while advancing innovation in medicine, nuclear security, environmental science and more.

The accelerator at FRIB will propel atoms to half the speed of light, resulting in collisions that produce rare isotopes that, until now, were only found in the cosmos, never on Earth.

Rare isotopes are versions of elements with a combination of protons and neutrons that do not hold together forever. To create rare isotopes at FRIB, a powerful beam of stable isotopes is sped up and collided with a target, producing rare isotopes.

Doors to discovery

Producing rare isotopes at FRIB also will lead to scientific discoveries that are bound to change society and improve lives. Nuclear science research already has led to the development of technologies such as MRI and PET scans, smoke alarms and cell phone technology. Additional breakthroughs in nuclear science are expected to yield further improvements in agriculture, environmental studies and many other fields.

Rare isotopes may also be used to research and develop new materials for everything from pharmaceuticals to alternative energy and fuel sources. And on the nuclear security front, FRIB scientists will be able to study rare isotopes to further understanding of nuclear reactions without the need for weapons testing.

One of the most immediate areas of potential impact is medicine. Breakthroughs in cancer medicine could be on the horizon. Doctors already use radioisotopes to find malignant cancer cells in PET scans. But medicine has yet to tap the full potential of rare isotopes to seek out and attack certain cancers in the body. Malignant cells can accumulate elements, like copper, and rare isotopes can help chemists and clinicians track them down.

Decades of experience

MSU has been a site of scientific discovery and a worldwide leader in nuclear science for more than half a century. The [National Superconducting Cyclotron Laboratory](http://nscl.msu.edu/), a [National Science Foundation](http://www.nsf.gov/) user facility, has operated for more than 40 years at MSU. FRIB looks beyond NSCL’s discoveries to envision the next-generation technology needed for next-generation rare isotope experiments.

Additionally, the university has been home to the [No. 1-ranked graduate program](https://msutoday.msu.edu/news/2022/graduate-programs-ranked-highly-u-s-news-world-report) in nuclear physics since 2010 and educates about 10% of the nation’s doctoral students in nuclear physics.

***NOTE TO MEDIA: THE RIBBON-CUTTING CEREMONY***

The ribbon-cutting ceremony is by invitation only. Media are invited. [Please see invitation](https://msutoday.msu.edu/news/2022/media-kit-frib-ribbon-cutting) for more information. RSVP via the form in the invitation if you plan to attend. All members of your news organization who plan to attend should register via the form. More details for media, including other expected speakers, will be sent in an advisory closer to the event date.

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Michigan State University (MSU) operates the Facility for Rare Isotope Beams (FRIB) as a user facility for the U.S. Department of Energy Office of Science (DOE-SC), supporting the mission of the DOE-SC Office of Nuclear Physics. The establishment of FRIB was funded by DOE-SC, MSU and the State of Michigan, with user facility operation supported by the DOE-SC Office of Nuclear Physics.

The [U.S. Department of Energy Office of Science](https://energy.gov/science) is the single largest supporter of basic research in the physical sciences in the United States and is working to address some of today’s most pressing challenges. For more information, visit [energy.gov/science](https://energy.gov/science).

Michigan State University has been working to advance the common good in uncommon ways for more than 165 years. One of the top research universities in the world, MSU focuses its vast resources on creating solutions to some of the world’s most pressing 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.

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