The Facility for Rare Isotope Beams at Michigan State University cares very much about sharing our nuclear research with the public. We hope that you, or someone you know, could use outreach programs **available at our building, your location (within a reasonable distance), or over Zoom**!

First: check out our laboratory's page of **digital education resources for nuclear science**! There you'll find the digital game "Isotopolis", YouTube videos, and downloadable activities.

These programs are available by appointment for groups of varying size, age, and knowledge:

- **Laboratory Tour** *(on-site or virtual)* - a live 60-90 minute presentation or walkthrough exploring our research spaces to see how world-leading research is done at FRIB
- **Talks** *(on-site, off-site, or virtual)* - a live 30-60 minute presentation
    - **Meet the Scientist(s)** - talk directly with one or more nuclear researchers to discuss how they got into the nuclear field and what they're working on now
    - **FRIB Research** - an overview of the goals of nuclear research at Michigan State University, demonstrating how FRIB will change the game
    - **Who will solve the problems: Careers in Science** - how physicists, chemists, mathematicians, plumbers, welders, machinists, computer scientists, and many more are needed to make cutting-edge science work!
    - **(almost) 14 Billion Years of Nuclei** - explore what we know about how the 90 naturally-occurring elements on Earth were made, from Big Bang nucleosynthesis to recently-discovered neutron-star mergers!
    - **Fantastic Nuclei and Where to Find Them** - discover how our researchers are producing the kinds of nuclei only found in stars and recreating stellar reactions with next-generation accelerators
- **Activities** *(on-site, off-site, or virtual)* - hands-on simulations using household items
    - **Introduction to isotopes** (30-60 minutes, depending on detail) - building and naming nuclei with a simple model, then learning to read the chart of nuclides before creating rare isotopes by "smashing" your model
    - **Detecting and modeling invisible nuclei** (15-20 minutes) - learning to measure through indirect observations, comparing evidence with models
    - **How the Universe made the elements** (90+ minutes, includes "14 Billion" talk above) - many activities demonstrating how to fill the periodic table - *participants should first complete "Introduction to isotopes" above or have equivalent knowledge*
- **Summer programs** *(on-site, may be switched to virtual)* - for grades 9-12 (PAN, PING), grades 7-8 (MST@MSU), college students (NS^3), or science teachers (PAN-CAKE) to explore further!

Contact visits@frib.msu.edu to make an appointment for any of the above. You're also welcome to request other alternatives, and we will try to accommodate you!

Zach Constan, FRIB Outreach Coordinator