Sanford Underground Research Facility
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FOR IMMEDIATE RELEASE

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SURF invites public to "Deep Talks: What's the matter with neutrinos?" with MAJORANA DEMONSTRATOR collaboration

The event will take place on Feb. 23, from 5 to 7:30 p.m. at the Sanford Lab Homestake Visitor Center in Lead, SD

LEAD, SD— Sanford Underground Research Facility (SURF) invites the public to attend "Deep Talks: What's the matter with neutrinos?" on Thursday, Feb. 23, from 5 to 7:30 p.m. MT. The event features a social hour and presentation from members of the MAJORANA DEMONSTRATOR collaboration.

The event will coincide with the MAJORANA Collaboration's annual meeting, as several dozen researchers travel to Lead to participate. "Deep Talks attendees will have the unique opportunity to get to talk with the scientists who conduct research at SURF from all around the world!" said Erin Woodward, coordinator of SURF's Deep Talks series.

There's a *lot* we know about neutrinos. For example, neutrinos act like ghosts, passing straight through most matter (including space dust, planets, and humans) without interacting at all. They are the Universe's most plentiful particle and are created, in part, by stars like our Sun. And, we know that neutrinos come in three types and can oscillate back and forth between types as they travel long distances.

But what we *don't* know about neutrinos is even more fascinating. In fact, one of the biggest questions in physics has to do with neutrinos: Are neutrinos their own antiparticles? If the answer is yes, it will require rewriting the Standard Model of Particles and Interactions, our basic understanding of the physical world.

To get one step closer to an answer, physicists built the MAJORANA DEMONSTRATOR nearly a mile underground at SURF. After six years of taking data, the collaboration published their final results this month.

At Deep Talks, researchers will explain how the MAJORANA DEMONSTRATOR worked, what they've learned, and what questions remain. Our speakers are Jason Detwiler, MAJORANA Collaboration co-spokesperson and associate professor of physics at the University of Washington, and Julieta Cruszko, professor of physics at the University of North Carolina, Chapel Hill.

The Deep Talks lecture series is sponsored by Crow Peak Brewing Company, RCS Construction, Northern Hills Federal Credit Union, Edward Jones, and Chuck and Jolene Lichtenwalner.

How to attend:

Deep Talks is held at the Sanford Lab Homestake Visitor Center, 160 W. Main Street, in Lead, South Dakota. The event begins at 5 p.m. MT with a social hour that includes a Crow Peak Brewing Company beer tasting (must be 21 and older to drink) and light refreshments. The presentation will begin in the Visitor Center classroom at 6 p.m. MT.

Want to attend virtually? The presentation will be livestreamed on this webpage starting at 6 p.m. MT: https://sanfordlab.org/event/deep-talks-whats-matter-neutrinos

Sanford Underground Research Facility is operated by the South Dakota Science and Technology Authority (SDSTA) with funding from the Department of Energy's Office of Science. Our mission is to advance world class science and inspire learning across generations. Visit SURF at www.sanfordlab.org.