

The Sanford Underground Research Facility

THE SANFORD UNDERGROUND RESEARCH FACILITY

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ABSTRACT

Building on rich legacies in both mining and transformational physics research, the Sanford Underground Research Facility (SURF) has been operating for over a decade as a facility dedicated to supporting underground research in rare-process physics, as well as offering research opportunities in other disciplines such as biology, geology and engineering. SURF laboratory facilities include a Surface Campus with recently upgraded capabilities as well as two main campuses at the 4850-foot level (4300 m.w.e.) – the Davis Campus and the Ross Campus – that host a range of significant physics experiments: the LUX-ZEPLIN (LZ) dark matter experiment, the MAJORANA DEMONSTRATOR neutrinoless double-beta decay experiment and the CASPAR nuclear astrophysics accelerator. Furthermore, the BHUC laboratory dedicated to critical material assays for current and future experiments has been operating since Fall 2015. Plans to accommodate the Fermilab-led international Deep Underground Neutrino Experiment (DUNE) at the Long Baseline Neutrino Facility (LBNF) are well advanced, and initial construction has commenced. SURF is a dedicated research facility with significant expansion capability, and applications from other experiments are welcome.

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