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The Sanford Underground Research Facility

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The former Homestake gold mine in Lead, South Dakota, has been transformed into a dedicated facility to pursue underground research in rare-process physics, as well as offering unique research opportunities in other disciplines. The Sanford Underground Research Facility (SURF) includes 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 projects: the LUX dark matter experiment, the MAJORANA DEMONSTRATOR neutrinoless double-beta decay experiment and the CASPAR nuclear astrophysics accelerator. Furthermore, the BHUC Ross Campus laboratory dedicated to critical material assays for current and future experiments has been operating since Fall 2015. Research efforts in biology, geology and engineering have been underway at SURF for almost 10 years and continue to be a strong component of the SURF research program. Plans to accommodate future experiments at SURF are well advanced and include geothermal-related projects, the next generation direct-search dark matter experiment LUX-ZEPLIN (LZ) and the Fermilab-led international Deep Underground Neutrino Experiment (DUNE) at the Long Baseline Neutrino Facility (LBNF). SURF is a dedicated research facility with significant expansion capability, and applications from other experiments are welcome.

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