

Abstract Submitted
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DUSEL Ultra-Low Background Counting Facility KEENAN THOMAS, The University of South Dakota, DUSEL ULBCOF COLLABORATION — The Homestake Mine in western South Dakota has been confirmed by the National Science Foundation (NSF) as the site for a Deep Underground Science and Engineering Laboratory (DUSEL). Many of the physics, geosciences, and microbiology experiments in the facility will be funded by DOE and NSF, and will benefit the missions of these agencies. In support of these programs, physics faculty in South Dakota and scientists at Lawrence Berkeley National Laboratory have been working together to establish a multidisciplinary research cluster to provide baseline characterization for physics and geosciences/geomicrobiology experiments at the Homestake Mine through an Ultra-Low Background Counting Facility (ULB-CoF). The proposed project utilizes two low-background germanium detectors with massive shielding underground to carefully analyze materials for low background experiments. Low background experiments such as double-beta decay, solar neutrino, geoneutrino, and dark matter must control the purity of all the materials used in the construction of a detector. Measuring such low counting rates is a very challenging task that will be best accomplished by primarily using high purity germanium (HPGe) detectors.

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