

OAK RIDGE NATIONAL LABORATORY

MANAGED BY UT-BATTELLE FOR THE DEPARTMENT OF ENERGY

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To whom it may concern:

Re: S-2 Proposal for DUSEL at the Kimballton Mine

I am research staff member in the Physics Division at Oak Ridge National Laboratory. My primary research interests are in the area of nuclear astrophysics, focusing on laboratory measurements of nuclear processes that are important in astrophysical environments. My work involves the development of highly-sensitive detector systems that are combined with state-of-the-art accelerator facilities to allow studies of exotic nuclei, weak nuclear processes, and neutrino-nucleus interactions. The low background environment provided by a Deep Underground Science and Engineering Laboratory (DUSEL) is crucial to allow many measurements of importance for nuclear astrophysics, including measurements of neutrinos from the sun and supernovae and for low-background measurements of small nuclear cross sections using a low energy particle accelerator.

My personal research interests at an underground laboratory are in measurements of low-energy solar neutrinos, as targeted by the LENS collaboration, and in low-background measurements of nuclear fusion cross sections. The Kimballton sight located in Southwest Virginia is very well-suited to both of these areas of research. Much of this research can be conducted at relatively shallow depth. The existing space and infrastructure at Kimballton would allow some scientific results on a rapid time scale and in a quite cost-effective manner. The proximity of Kimballton to ORNL and our special working relationship with Virginia-Tech (an ORNL "core university") would encourage strong collaborations between DUSEL and ORNL scientists. I would like to express my personal support for the DUSEL project and for the Kimballton location. I would be very interested in helping to develop the research opportunities for nuclear astrophysics there.

Sincerely;

Jeff Blackmon