



## Proposal Status | MAIN ▶

**Organization:** University of Washington

### Review #1

<b>Proposal Number:</b>	0528025
<b>Performing Organization:</b>	U of Washington
<b>NSF Program:</b>	Underground Physics
<b>Principal Investigator:</b>	Haxton, Wick C
<b>Proposal Title:</b>	Conceptual Design Proposal: The Deep Underground Science and Engineering Laboratory - Cascades, A Horizontal-Access Facility
<b>Rating:</b>	Very Good

### REVIEW:

What is the intellectual merit of the proposed activity?

**Intellectual Merit:** The proposal sets forth a compelling argument for funding a study on a DUSEL in the Cascade region of the State of Washington. The authors and the University of Washington have the expertise and facilities to successfully execute the proposed work. The reviewer notes that the proposed budget is some \$908K versus the requested \$500K. The reviewer agrees that the cost of the proposed work is more consistent with the former figure, but the proposal is largely silent as to the source of the other funds. It is assumed that the funds will be obtained from other sources (possibly the University of Washington, PNNL or perhaps the State of Washington.) This is an issue in the sense that the scope of work is larger than the proposed funding and the PI's do not give a path for how the work can be accomplished given the inadequate level of funding requested in this proposal. The PI's need to provide the NSF with a clear funding path for the remaining \$408K in order to determine if this is a viable proposal in the end. If there is a clearly defined funding scheme for the remaining funds, this will not be a disqualifying issue. In the larger issue of a DUSEL concept, the proposed concept can provide fully adequate facilities for a science program as presently envisioned by the community (particularly for particle astrophysics, this reviewer is not qualified to review to the biological and geological science aspects.)

What are the broader impacts of the proposed activity?

**Broader Impact:** the broader impact of the proposed work is limited. This proposal is for a study to provide necessary information on the feasibility of a DUSEL facility in the Cascades. It appears that apart from web site support, which can have some broader educational impact; this proposal does not focus on anything other than getting a portion of the funds required to do the proposed study. This is reasonable. Apart from some minor negative environmental impact of the core drilling, the proposed work has little negative impact. One item that is recommended to be added to the scope of work for the DUSEL-Cascades Office (which is funded from elsewhere) is a public outreach program to begin to offset anti-DUSEL sentiments in the community. The proposal states that there is already some negative community feeling. Understanding the basis and scope of this negative feeling is vital if an effective strategy is to be formulated to mitigate it as soon as possible. The broader impact of the larger issue of the DUSEL itself does appear to be significant. The team has capability to reach a broad spectrum of people, including non-scientists given a large body of visitors to the area and area schools.

### Summary Statement

This proposal is for \$500K to study the concept of installing a Deep Underground Science and Engineering Laboratory (DUSEL). The proposal stands on its own merit, but there is the larger issue of the facility itself and whether or not it is a practical and viable concept. If it were not, it would be folly to spend these funds in favor of some other scientific program. This review shall look to the merit of the proposal itself, in the context of the larger issue, but the review stops short of taking on the task of determining the merit of the entire future facility cost.

There are many positive features concerning this proposal for a DUSEL concept. The main concept has the attractive feature of being a new, stand-alone facility that does not have to share a mission with another operation: this enables a dedicated facility to science. The concept also provides for horizontal entry to the underground facility, a key feature in simplifying access. The proposed area is fairly close to Seattle, a well-traveled destination, making transportation costs for individual-funded awardees more approachable. On the other hand, the concept has the disadvantage of bearing the entire cost of construction, operation and site restoration. A secondary concept of upgrading a railroad/utility tunnel facility is also proposed. This stands only as a secondary site to the main concept to fully exploit the desired programs of the particle astrophysics community. The main site has the potential of having an antagonistic effect on the local population given the environmental sensitivity of the area, both physical and emotional. If local opposition to the facility comes to reality, the ensuing legal battles may tie-up this proposed facility for a long time and cost many dollars that could be spent on science elsewhere.

On the merits of the proposal as a study to gain more information on the viability of a DUSEL site in the Cascades, this proposal is fundable. The estimate of funds needed to complete the proposed work seems reasonable. There is an issue of a clear funding path for the entire amount of money necessary to complete the task as the proposal requests only a portion of the estimated funds needed.