Expression of Interest - LANL

Please indicate the name of the contact person for this submission:

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Please indicate all institutions collectively involved in this submission of interest:

Los Alamos National Laboratory, Brookhaven National Laboratory, Jefferson Laboratory, Argonne National Laboratory, Fermi National Accelerator Laboratory, Karlsruhe Institute of Technology, Rice University, Temple University, University of Michigan, UC Santa Cruz, University of Heidelberg, UC consortium.

Please indicate the items of interest for potential equipment cooperation:

We would like to contribute to the realization of a proposed forward silicon tracker with the pseudorapidity coverage from 1 to around 4 sitting in the nucleon/nuclei beam going direction. We will cover 1) silicon detector R&D, 2) readout demonstration and integration, 3) silicon detector mechanical structure design, 4) silicon vertex/tracking detector integration with the other EIC detector sub-systems, 5) computing and 6) background evaluation.

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Opportunities for engagement of other groups

Collaboration work on the silicon vertex/tracking detector design, selected silicon sensor and readout R&D, sub-detector integration and computing developments.

Additional information you think may be useful for the community to know about your expression of interest.

We have carried out a series of detector/physics simulation studies which are associated with the proposed forward silicon tracker as documented in arXiv: 2009.02888. The silicon detector R&D work is ongoing with the support of a LANL LDRD project. LANL and the listed collaborators have in depth knowledge of the silicon detector design and construction. Good records of successful silicon detector assembly and operations are maintained for the past 20 years. We also have close collaboration with theorists at LANL and several other institutions to work on several EIC physics topics such as hadronization process in nuclear medium.