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The COHERENT experimental program at the SNS

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COHERENT collaboration is the first that observed Coherent elastic neutrino-nucleus scatter (CEvNS) events in 2017. A 14.6 kg CsI(Na) was placed 20 meters away from the Spallation Neutron Source (SNS) at the Oak Ridge National Laboratory (ORNL). The first measurement of CEvNS on Argon was then followed up in 2020. The 1.4 MW SNS pulsed proton beam provides a uniquely high-quality and high-intensity neutrino source. Our low-energy-threshold detectors sited in the low-background “Neutrino Alley” near this source are producing world-leading sensitivities on broad physics topics, such as inelastic neutrino-nucleus interactions, searches for accelerator-produced dark matter (DM) and physics beyond the Standard Model. COHERENT’s ongoing and near-future programs and their physics reaches will be discussed in detail.

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