

## Physics Division Seminar

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### **Coherent Elastic Neutrino-Nucleus Scattering Experiments and a New Tool for Nuclear and Particle Physics**

Host: Sereres Johnston

**Monday, April 22, 2019 – 203, R150, 3:30 PM**

More than 40 years after its theoretical description, the process of coherent elastic neutrino-nucleus scattering (CEvNS) has been observed for the first time by the COHERENT Collaboration. This observation was made using a 14.6-kg CsI[Na] detector located at the Spallation Neutron Source (SNS) of Oak Ridge National Lab, which provides the world's most intense source of pulsed neutrinos. This talk will present details of the CEvNS observation and continued efforts within the COHERENT Collaboration. The importance of continued and complementary CEvNS measurements will be discussed, including an overview of upcoming and ongoing global efforts, along with the breadth of physics sensitivity shown by the process, including connections to nuclear structure, astrophysics, dark sector physics, and other physics beyond the Standard Model.