X-ray fluorescence (XRF) is a non-invasive, non-destructive technique for elemental analysis utilized by scientists at CHESS and other institutions. Recognizing the broad applications of this type of technology, the Xraise outreach group worked with Devin Sonne, an undergraduate research student from Mohawk Valley Community College, on a summer project blending XRF research and outreach capabilities. Devin helped orchestrate collaboration between Dr. Robert Ross, education director at the Paleontological Research Institute (PRI) at the Museum of the Earth and Xraise to explore possible ways in which XRF technologies can be utilized by the geosciences to develop extended learning outcomes for secondary science education. During the course of her summer project, Devin oversaw the training of PRI staff on the use of the portable XRF device with the assistance of Dr. Peter Revesz. She helped to establish proper documentation and transportation protocols for the device by working with Cornell Environmental Health and Safety. She applied for a permit that would allow for the device to be used at one-day outreach events across the state of New York and for multi-day events at the Museum of the Earth. In addition, Devin led a workshop at the Museum for regional high school Earth Science teachers and visiting Science Educators from the University of Georgia. Shale and fossil samples were analyzed onsite and the results of the preliminary analysis will be made available online as part of the national “Fossil Finders” project.

Devin Sonne, Dr. Peter Revesz and staff from Environmental Health and Safety load the portable X-Ray Fluorescence Device at Wilson Laboratory before making the journey to the Museum of the Earth.
A group of high school Earth Science educators work with Devin and Dr. Rob Ross to instantly analyze the elemental composition of a shale sample they collected the day before near Tully NY as part of the national Fossil Finders project.

Lora Hine, CHESS, Cornell University
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