

Akita University Student Chapter (SEG-AUSC)

Students from the Graduate School of International Resource Sciences, Akita University, Japan, participated in a three-day field excursion August 5 to 7, 2019, in the Miyagi, Yamagata, and Fukushima prefectures of southern Tohoku, Japan. The main objective of the field excursion was to explore and get practical experience on the geology and mineral resources of southern Tohoku.

The first stop was the Hiraizumi temple, the interior of which is lavishly decorated with gold that originated from orogenic gold deposits in north-eastern Japan. On the same day we visited the Hosokura mine park to navigate through the underground mine (now closed), which used to be one of the largest epithermal to mesothermal polymetallic (Pb-Zn-Ag-Cd) vein-type deposits in Japan. The next stop was the Itaya zeolite deposit, which has recently been used to correct the soil system of the Fukushima nuclear plant, following the 2011 nuclear accident. A full day was allocated for the Adataro volcano, where we had an opportunity to observe



Akita University field trip participants at the top of Adataro volcano, with the Numanotaira (the sulfur river) crater in the background.

and witness active H₂S fumarolic hot springs, different rock types (some of which were mineralized with fine-grained pyrite), residual silica (potential fluid conduit), and the Numanotaira

crater. On the last day we visited Ishikawa pegmatite deposits from which feldspar and mica were mined mainly for ceramic and clay making.

University of Michigan SEG Student Chapter Field Trip

The University of Michigan (USA) SEG Student Chapter organized a field trip to tour the geology in the Marquette, Michigan, area from November 7 to 9, 2019. On November 8 the group visited the Eagle Cu-Ni mine, a subsidiary of Lundin, for an underground mining tour to see the mineralization styles and extraction techniques up close. We

spoke with several Eagle mine geologists in various roles, including exploration, ore control, and core loggers, and learned about the progression of a mine from the exploration stage to resource assessment, production, and mine closure. After leaving the mine site, we met with geologists from a local environmental consulting firm that

monitors the hydrology of the wetlands and rivers around the mine site. We learned about the permitting process for an underground mine operation (like Eagle) and how it contrasts with regulatory protocols for an open-pit mine. The day ended with an informal meeting with local geologists, including our Student Chapter's industry sponsor, Robert Mahin, the exploration manager at Eagle.

The next morning, we embarked on a geologic tour of the Marquette area and visited outcrops of 2.7 Ga pillow basalts, the Black Rocks ultramafic intrusion on Presque Isle, and the exposure of 1.8 Ga banded iron formation of Jasper Knob. The trip was a great opportunity to make connections between the regional geology, an economic magmatic sulfide deposit in operation, and the environmental monitoring that quantifies the impacts of an underground mine in a remote yet populated area. We are planning a future trip to explore the incredible native copper deposits of the Keweenaw Peninsula and to visit the Seaman Mineral Museum at Michigan Tech.



Geared up with cutting-edge safety equipment, students explored the underground facilities at the Eagle mine.

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