

SERC NEWS

A NEWSLETTER FROM SMART EXPLORATION RESEARCH CENTER

SUMMER 2025

STUDENT PROGRESS

PhD

We are very happy to announce that **Zbigniew Wilczynski** have defended his doctoral thesis -Advancing near-surface seismic investigations for mineral exploration. Congratulation Dr Wilczynski!

MSc

Stefanos Sykiotis -Predicting Physical Properties Using Neural Networks: A Case Study from Ludvika Mines - Central Sweden.

Sara Rognås -Unravelling Geological Structures Controlling the Groundwater Table in the Blötberget Mine Area.

Leopold Chicoine -Mineralogical department and Trace Element Geochemistry of REEs in the Blötberget Apatite-Iron-Oxide Deposit, Central Sweden.

BSc

Frida Huonen -The Triphylite Group Minerals from the Bergby-Axmar LCT-Pegmatite Field.

Kevin Gashi -Development of a geological model based on borehole- and drill rig data: A pre-study for sustainable drilling at the Epic Test Center in Örebro.

Joshua Johannesen -Development of a geological model based on borehole- and drill rig data: A pre-study for sustainable drilling at the Epic Test Center in Örebro.

Anton Eriksson -REE Distribution and Mineralogy in the Blötberget Iron Oxide Apatite Deposits: Insight from the Hugget Ore Body.

Maria Arnover -REE Distribution and Mineralogy in the Blötberget Iron Oxide Apatite Deposits: Insight from the Kalv Ore Body.

AN INTENSE SUMMER FOR SERC!

The autumn is here and it is time to sum up the Center activities during the summer. As usual it's been a lot of fieldwork for most exploration geologists, but there have also been conferences, a PhD summer school in Finland hosted by Eurobattery Minerals and various meetings etc. some of which are presented here. The SERC summer was concluded in August with our second General Assembly in Örebro.

THE GENERAL ASSEMBLY AUGUST 26-27

Epiroc-Örebro

Hosted by Epiroc Örebro (thanks Anders Persson!), the two day meeting gathered more than 60 participants from nearly all our partners, sponsors and Friends of the Center. The first day included general status and updates from the center management, our four thematic hubs and panels, our industry partners and supporters. Our new Friends of the Center had the opportunity to introduce themselves. The day ended with a very appreciated Rapid-fire session where our Young Professionals first presented their work in one minute, followed by a relaxed poster session. Awarded for best presentations and posters were the PhD students Zixuan Ding and Alan Martinez Salinas, both from Uppsala University.



The second day started with a visit to Epiroc's impressive surface factory in Örebro, followed by a workshop about what industry wants from academia and how to enhance the Centers internal cooperation. The meeting ended with a bus trip to Sala where we visited the historic silver mine.

Also attending the meeting was our international Advisory Board members that gave us valuable input on how to improve our activities.

New Friends of the Center!

We welcome Viridien as Friends of the Center on HREE-level and Inertial sensing One AB and Stryde as LREE! All are very well fitted to join our common effort for our purpose - Sustainable Smart Exploration! They were all represented at our General Assembly: Joe Fletcher and Junior Potgeiter from Viridien, Duncan McLeod from Inertial sensing and from Stryde Nick Tranter and Nicolas Goujon.

CONFERENCES ETC

• Vienna

At the EGU General assembly SERC was represented by Zbigniew Wilczynski, Lea Gyger, Arianna Koufopoulou and Michael Westgate from UU, and Peter Kelemen from GU.

• Canada

Alireza Malehmir had an hour lecture on GAC-MAC 2025 short course on Controls on gold and VMS deposits in Archean terrains and modern oceans, covering geophysical aspects of exploration of these deposits.

• Toulouse

At EAGE in June Myrto Papadopoulou, UU, received the Arie van Weelden Award. Congratulations Myrto!

• Virtual

Viktor Stender, UU, was awarded 2nd place at the 9th SEG Europe Virtual Student Conference for the presentation *Multi-element seismic survey for characterizing mine tailings at Blötberget*.

YouTube SERC now on YouTube!

Check out the videos on our new YouTube channel where most of our filmed materials will be published: www.youtube.com/@smartexplorationresearchcenter



FIELD/LAB PROJECTS DURING THE SUMMER

Utö

Within Hub 2 field work was carried out during spring and summer on Utö, Stockholm archipelago, investigating the extent of hydrothermal alteration related to the ore deposits there.

Jämtland

At Tåsjö pilot seismic surveys were conducted with short lines and a geophone grid, testing reflection, refraction, and ambient noise methods. These results will provide valuable insights into the structure of the Alum Shale in the Caledonian Front. In addition also geological sampling, gamma-ray measurements, and Raman spectroscopy was done. This integrated approach is central to our project on REE mineralization and graphitization, aiming to link metamorphism, metal mobility, and seismic properties. By advancing methods for imaging and understanding these organic-rich rocks, we are developing new strategies to characterize black shale resources. Hub 3 has established a site specific database for all petrophysical data, ready for applying the ML algorithms that have been developed for finding new "mineral relations".

Bergby

During the first week of May, several U-Pb SIMS analyses were conducted on zircons and monazites from the different intrusive rocks present in Bergby, including the Li-bearing pegmatites. They were performed at the Naturhistoriska Riksmuseet in Stockholm. These results may aid in determining the genetic characteristics of the LCT-pegmatites and the link between their emplacement and evolution with the deformational environment.

Finland

The Nordic Exploration PhD Summer School took place at the Hautalampi Battery Mineral Project in Outokumpu. PhD students from eight Nordic and Baltic universities participated in this intensive, field-based program focused on sustainable mineral exploration. Working in three interdisciplinary teams, the students, coming from backgrounds in geochemistry, geophysics, ore geology, data science, and related fields, tackled real-world challenges related to mine tailings, waste rock reuse, and the Hautalampi deposit itself. Feedback from participants was overall positive, with many expressing a strong interest in taking part in similar initiatives in the future. The summer school was organized by Uppsala University in collaboration with Eurobattery Minerals and the Smart Exploration Research Center, and was made possible with support from Swedish Mining Innovation and Vinnova.

FUNDING FOR MSC/BSC PROJECTS!

Smart Exploration Research Center (SERC) offer financial support with up to 50 kkr for MSc and 25 kkr for BSc theses on projects focusing on critical raw materials exploration and geo-metallurgy in Sweden. This initiative aims to foster collaboration between academia and industry within the center, but also beyond, providing Swedish students with the opportunity to engage in cutting-edge research while addressing real-world challenges.

For details please contact Erik Ogenhall at erik.ogenhall@geo.uu.se

UPCOMING THIS AUTUMN

- [Fennoscandian exploration & mining FEM 2025](#), oct 28, Levi Finland
- [IPGC #5](#), nov 5, Zaragoza Spain
- [REE symposium](#), nov 24, Stockholm University
- [Svemins autumn summit](#), nov 25, Sergel hub Stockholm
- [Svemins Exploration day](#), dec 9, Bygget Stockholm