



EUROPEAN ACADEMY
of Sciences and Arts

COLLOQUIUM of the Global p-XRF Network with European Academy of Sciences & Arts



Colloquia on portable X-Ray Fluorescence **October 29th 2025, 06:00-08:00 pm CET**

Dr. Lee Drake
"XRF and Machine Learning"

Abstract:

Machine learning (ML) can empower XRF analysis. This brief talk will provide an overview of ML methods, both quantitative and qualitative alongside best practices for training.

Dr. Anno Hein
"Machine Learning approaches in the evaluation of pXRF data in provenance studies of transport amphorae"

Abstract:

During the recent years handheld portable energy dispersive XRF (pXRF) systems have been introduced in the study of archaeological materials allowing for fast and non-invasive measurements of elemental compositions. In the case of pottery analyses, though, the determined element concentrations are commonly less precise and accurate than compositional data collected with laboratory measurements impeding the use of conventional statistics. For this, various machine learning approaches, unsupervised as well as, have been tested for the automated categorization of elemental data collected with pXRF in studies of Archaic, Hellenistic and Roman transport amphorae from the Eastern Aegean region.

Led by the network and endorsed by the European Academy of Sciences & Arts/STEMAC Expert Group, we are organizing a series of online colloquia to explore the use of pXRF in archaeology and cultural heritage. The colloquia aim to provide a platform for knowledge exchange, featuring expert presentations from both the natural sciences and the humanities. Each session will include 30-minute talks by specialists from archaeology and natural sciences, followed by a 30-minute discussion. Topics include:

- Resources and guidance for the XRF community
- Case studies and exemplary applications
- Opportunities for knowledge exchange

Recordings of the colloquia will be available, and participants can submit case study reviews for publication in PEASA (www.peasa.eu).

Contact us:

Michaela Schauer (VIAS, UNIWI AUSTRIA; <https://homepage.univie.ac.at/michaela.schauer/>)

Ioannis Liritzis (Dean Class IV, EASA, Salzburg; www.euro-acad.eu)

Keelie S. Rix (CASEs Universitat Pompeu Fabra, CAMP ERC; <https://www.upf.edu/web/camp>)

Email inquiries: keelie.rix@upf.edu, michaela.schauer@univie.ac.at
or ioannis.liritzis@euro-acad.eu