Educating Handheld XRF Users in Cultural Heritage: XRF Bootcamp for Conservators

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The ability to employ non-invasive and non-destructive analytical methods that can be used in situ is essential in the study of works of art and other cultural heritage materials, as the removal of samples for analysis is generally severely limited, or in many cases forbidden. As such, X-ray fluorescence spectroscopy has arguably become the most widely employed analytical technique in the scientific examination of works of art. While only a few museums could afford the open-architecture units first available in the 1980s, the subsequent proliferation of relatively inexpensive and easy-to-use handheld spectrometers has enabled this technique to be acquired by a much larger number of institutions and operated by a wider range of users. In many of these institutions, the responsibility for operating the instrument – and interpreting the data – falls to conservation professionals, who may or may not have sufficient scientific background to correctly apply the technique or accurately interpret the results.

In 2013, the Getty Conservation Institute, in collaboration with Yale University, organized the first of a planned series of focused workshops on the fundamentals of XRF and data interpretation for art conservators – XRF Bootcamp for Conservators. The selected participants were conservators from institutions without a conservation scientist on staff or with only limited access to one. Twenty participants from around the world, including Singapore, Qatar, Japan, Norway, Ireland as well as the United States, spent four intensive days of lectures, lab practicals and group projects using objects from the Yale University Art Gallery and the Yale Peabody Museum to gain a strong foundation on the scientific theory of XRF and practical, hands-on experience in its application to works of art and cultural heritage objects.

This presentation will discuss how the specific needs and special circumstances frequently encountered in the analysis of cultural heritage materials can be effectively incorporated into a training and education experience to enable users to develop a deeper understanding of the technique and transitioning from being merely a user to critical thinkers.