

---

# BRUKER X-RAY FLUORESCENCE WORKSHOP SCHEDULE

+1 505.510.1518  
lee.drake@bruker.elemental.net

415 N. Quay St.  
Kennewick, WA  
99336

## Day 1

### **Introduction to Photon Physics**

**9.00am - 10.30am**

We review color fluorescence, including how photons are excited in tubes and subsequently interact with materials. We also look at the structure of the atom, and the ways in which photons and electrons interact to produce the spectra used in x-ray fluorescence.

### **Practice with X-Ray Fluorescence**

**10.30am - 11.00am**

Whether you are an archaeologist with ceramics and ancient metals, an environmental scientist with potentially contaminated soil, or an art conservator with a painting, we can begin to take a look.

### **Analysis Parameters**

**11.00am - 12.00pm**

We review the key parameters that must be controlled for proper x-ray fluorescence analysis, including a) energy, b) current, c) filter, d) time, and e) atmosphere. However you process data, it is critical to take data with the same parameters if the goal is comparison.

### **Bayesian Deconvolution**

**1.00pm - 2.30pm**

The principles of Bayesian inference and its application to spectral analysis are covered for non-uniform materials. Bruker ARTAX software is used for this powerful application.

### **Quantitative Calibration**

**2.30pm - 4.00pm**

The process for creating and applying calibrations is covered, including their mathematical basis and limitations. In addition, using S1CalProcess for creation of new or modification of existing calibrations is detailed.

## Day 2

### **Practice with Data analysis**

**9.00am - 12.00pm**

The second day begins and ends with hands-on application with Bayesian deconvolution and quantitative calibrations.

---