

Abstract Submitted  
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**Filtering out pesky air pollutants with XRF<sup>1</sup>** AMANDA KENNELL, THOMAS NORRIS, SARAH FORMICA, University of North Georgia, Dahlonega GA 30597 — A monochromatic, micro-X-ray Fluorescence Spectroscopy ( $\mu$ XRF) system is used to analyze spider webs to detect metal particulates that are commonly found in polluted air and automobile exhaust. In order to quantify the amount of Fe particulates in the environment, a calibration curve is being constructed by contaminating the spider webs with a known amount of Fe particulates, which is then varied in each web to compare concentration of Fe to X-ray counts from the detector. This calibration curve will be utilized to determine the Fe concentration in different spider webs from different locations outside which will quantify the amount of Fe in their surrounding environment. Later, calibration curves will be built for other heavy metals that have been found in the environment such as Zn, Co, Mg, Pt, and Pb. The spider webs that are in higher traffic regions show higher amounts of heavy metals in them compared to lower traffic webs. To show that spider webs are an efficient method for determining air pollutants, government standard air filters, used for detecting pollutants, are being compared to a spider web to see which filter is able to collect the most particulates in the environment in a set amount of time.

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