



American Chemical Society

Central Wisconsin Section



The Application of Chemistry to the Examination of Works of Art

Dr. Suzanne Quillen Lomax
National Gallery of Art, Conservation Division

7:30 PM Wednesday, April 19, 2006
Phillips Hall 119, UW - Eau Claire

Dinner 6:00 Sweetwaters Restaurant
1104 W. Clairemont Ave, Eau Claire



Abstract Scientists have been associated with museum conservation laboratories for many years. Only recently, however, have art curators and conservation begun to appreciate the contributions that scientists can make in the preservation and restoration of the art objects. At present, about a dozen museums in the United States have conservation science departments. Art conservation frequently requires specific information about the component materials of a painting or object prior to treatment. Due to the complex stratification of paintings, most questions that arise concern the nature of their components. Microscopic cross sections of a painting are frequently taken and viewed with the polarizing microscope to understand the different layers that make up the object. Pigment identification is frequently employed to determine if the pigments are in keeping with the time period of the object, as well as to understand the artist's materials and methods. Such tasks are performed using polarized light microscopy and X-ray diffraction of powdered samples or X-ray fluorescence, which is well-suited to this talk due to its noninvasive nature. To study the identity of binding media, the conservation scientist uses gas chromatography (GC), high-performance liquid chromatography (HPLC), and infrared spectroscopy. GC is used to identify oil-containing binders, as well as for the identification of waxes and various low molecular weight resins, HPLC can be used to identify proteinaceous binders and organic dyes. Ultraviolet radiation can be used to examine the varnish layer of a painting as well as to identify areas retouched in previous conservation treatments. Infrared reflectography is frequently used to examine underdrawing on a painting. In addition, X-rays are often used to determine where lead white has been used on a painting, as well as to reveal damaged areas beneath the painting's surface. This talk will focus on the application of these various techniques to the examination of paintings and sculpture. Examples will be presented from the National Gallery of Art collection.

Biographical Sketch Suzanne Quillen Lomax received her Ph.D in organic chemistry in 1984 from the University of Maryland, working with Patrick Mariano exploring the photochemistry of iminium salts. She then went to Northwestern University, where she performed postdoctoral research with Frederick Lewis, examining intermolecular photoaddition reactions. Dr. Lomax has been in the Scientific Research Department of the National Gallery of Art since 1986, investigating the identification and aging behavior of artists' materials. She has been a tour speaker for the American Chemical Society Speaker Service since 1991. Her areas of interest include the identification of synthetic organic pigments and modern paint binders. In addition, she has performed extensive analyses on traditional 15th and 16th century artists' paint binders.

Gather at 5:30 for liquid refreshments. Eat at 6:00. The meeting will be at Sweetwaters Restaurant, 1104 W. Clairemont Ave, Eau Claire (near the intersection of Clairemont (US 12) and State Highway 37).

Dinner reservations should be made by contacting **Dave Lewis** at:

715-836-4744 or email **lewisd@uwec.edu** before noon on **Tuesday, April 18.**