



### **B28 The Utilization of Classical Forensic Methods in the Study and Preservation of Human History and Cultures, the Conservation and Restoration of Objects of Art and Artifacts, as Well as the Detection of Art Fraud and Counterfeiting**

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**Learning Overview:** The goal of this presentation is to further advance the utilization of well-established forensic science analytical methods and techniques in the study of historic preservation and art conservation.

**Impact on the Forensic Science Community:** This presentation will impact the forensic science community by assisting attendees to acquire the knowledge, skills, and ability to apply classical forensic science methods and techniques to the disciplines of historic preservation and art conservation.

Edmond Locard, a founding father of forensic trace evidence analysis, noted in 1929 that whenever a person commits a crime, there is always a mutual transfer of trace evidential materials between the people, places, and things involved in the crime. Locard established in his work, research, and writings that these traces can be effectively used to not only describe the people, places, and things involved in an event, but the incident itself. In other words, transferred trace evidence can be used to reconstruct the crime.

It turns out that the application of Dr. Locard's principle of mutual exchange, classical forensic science investigative rationale, well-established forensic scientific methodologies, and laboratory tools can be successfully applied in many other scientific endeavors. Relics such as fragments of textiles, minute pieces of stone, ceramic, pottery, glass, metal, and wood or any artifact of historical interest found at archeological studies of ancient sites can be documented, studied, analyzed, identified, and compared employing forensic methods and procedures.

Additionally, art-oriented scientific disciplines, such as historic preservation, scientific authentication, preservation and conservation of historically significant buildings, monuments, statuary, fine and decorative arts, can all benefit by applying the forensic approach to identity, individualization, and reconstruction.

Typically, preservation, conservation, and authentication projects start with an in-depth study of the subject's history and ownership of the artifact or object of art that is under study. In the case of a piece of fine art, provenance is often of prominent importance. Next, features, such as an artist's style and technique, are crucial to their endorsement. Other essential aspects, including the chemical analyses of the materials available during an artist's lifetime, are vital in determining the authenticity of a work. In many cases, less-scientific forms of proof, such as an artist's signature, the identification of a fingerprint, the advice of experts, or the opinion of a connoisseur, are the sole evidence of proof. These forms of evidence often lead to confusion and misidentification.

When questions remain concerning the methods and materials used to produce the work or the authorship of the work, the trace evidence embedded within the work remains a vital, untapped, valuable, gold mine of data and unbiased proof to acquire information concerning these artifacts, articles, and works and to determine the work's creation and creator.

This study presents real-life examples in which the Locardian principal, forensic investigative logic, and well-established forensic methodology can apply to the disciplines of historic preservation, fine and decorative art restoration and research studies, as well as conservation and restoration case studies. A number of studies of vital historical note, including the restoration of the original Statue of Liberty in 1983, the authentication of the missing 9/11 American flag, the identity of the American flag draped around the shoulders of the 1980 gold medal-winning USA Hockey team's goaltender, a research study of the dust in Napoleon's origin dress uniform, as well as several works of decorative and fine arts paintings, including the long-suspected last work of Jackson Pollock, are presented and fully elucidated.

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#### **Forensic Science, Historic Preservation, Art Conservation**