



## Last Word Society- 2016

### LW1 The Best Forensic Scientist You've Never Heard of: Wilmer Souder and the Early History of Forensic Science at the National Bureau of Standards (NBS)

*Kristen Frederick-Frost, PhD\**, NIST, 100 Bureau Drive, MS 2500, Gaithersburg, MD 20899; *Robert M. Thompson, BS, NIST, Special Programs Office-Forensic Sciences, 100 Bureau Drive, MS 8102, Gaithersburg, MD 20899; and John M. Butler, PhD\**, NIST, 100 Bureau Drive, MS 4701, Gaithersburg, MD 20899

---

After attending this presentation, attendees will have a new appreciation for the early history of forensic science in the United States and the role that the National Bureau of Standards (now the National Institute of Standards and Technology (NIST) played in forensic casework from the 1920s to the 1950s.

This presentation will impact the forensic science community by providing a new appreciation for the early activities of the NBS in the formation of the Federal Bureau of Investigation (FBI) Laboratory and other early federal forensic science activities.

Rum-running, murder, kidnapping, and forgery are not subjects of study that are typically associated with the NBS; however, they were the bailiwick of NBS physicist Wilmer Souder (1884-1974) and the crime laboratory which he developed. Until recently, the early history of forensic science at the NBS has not been explored. Interest in this topic has increased as the visibility of NIST's current research and efforts in forensic science rises; specifically, its involvement with the National Commission on Forensic Science, the Organization of Scientific Area Committees, and the newly formed NIST Center of Excellence for Forensic Science. Reconstructing Souder's career and impact on forensic science between 1920 and 1950 provides insights into the development of the discipline's methodologies and its path to professionalization — issues that are still of interest today.

Skimming the literature immediately available on Wilmer Souder paints a portrait of a rather remarkable physicist, not a criminalist. He first came to the NBS in 1911 after completing a master's degree in physics from Indiana University. In 1913, he left to pursue a PhD in physics at the University of Chicago. Souder's dissertation concentrated on the photoelectric effect, a topic which would help earn his advisor, Robert Millikan, the 1923 Nobel Prize in Physics. By 1917, Souder returned to the NBS and oversaw research regarding length measurement and the thermal expansion of materials. As such, he was an ideal candidate for the Army to contact in 1919 to research improvements in dental fillings. Many publications and suggested improvements for dental amalgams followed, earning Souder recognition as an authority in the field. To this day, the International Association for Dental Research has an award named in his honor.

But this was just one side to Souder's research. Hints of his involvement in forensic science are found tucked in between the dental research articles and related awards in his file in the NIST archives. Newspaper clippings offered the first real insight into his research for several high-profile criminal cases, most notably Souder's contribution to the handwriting analysis for the Lindbergh baby kidnapping case. A January 1954 *Washington Post* article called him "one of the Nation's best but almost certainly one of its least-known criminologists." Another newspaper article headline announced his retirement from the NBS with the headline "The Underworld Will Approve." It was clear there was more to Souder than met the eye.

The recent rediscovery of nine Souder notebooks dating between 1929 and 1953 revealed that his impact on forensic science extended far beyond a handful of high-profile cases — by several orders of magnitude. From handwriting analysis to ballistics identification, Souder interacted with a host of federal agencies and investigators. He conducted numerous analyses, issued reports, and would often back up his findings by providing expert testimony in court. The notebooks allow us to trace these interactions as well as the various networks between early forensic scientists and laboratories. Souder didn't just build a crime laboratory at the NBS; he was active in training the next generation of practitioners. His involvement in the development of the FBI laboratory is a notable example.

Souder imparted his views on how to both draw conclusions and convince others of their validity. He strongly advocated for processes, methodologies, and controls that would elevate the profession as a whole. While he may have worked quietly behind the scenes, Souder's impact was wide-reaching.

---

**Forensic History, NIST, Handwriting Analysis**