



A107 In Search of Jane Doe: An Analysis of Solvability Factors in Unidentified Remains

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The goal of this presentation is to investigate solvability factors in long-term unidentified persons cases with specific attention given to the methods employed in the Florida Cold Case Program model. Attendees will be presented with a model for cold case review that has led to seven identifications within the study period.

This presentation will impact the forensic science community by demonstrating the manners in which a comprehensive cold case model using new methods and technologies may provide fresh investigative leads on cases that are decades old.

In Florida, there are more than 10,000 unresolved open homicides, or “cold cases,” dating to the 1960s, representing families who have been denied justice. There are also more than 850 individuals recovered in public places who have not been identified to date (including more than 50 juveniles), the majority of whom are homicide victims or who died of unknown circumstances. Many of the long-term unidentified cases remain unsolved because missing persons reports were not issued or not recorded in modern databases such as the National Crime Information Center (NCIC).

The Tampa Bay Cold Case Project started at the University of South Florida Forensic Anthropology Laboratory (USF-FAL) in 2007 and quickly grew in scope to a statewide initiative with cases routinely submitted for review and technical assistance. This project has led to many successful outcomes and positive identifications. As a result, missing persons cases are closed due to identification, and new investigative leads are now available for decades-old cases.

The purpose of this presentation is to conduct a study of the solved and unsolved cases analyzed in the cold case project to assess which methods and factors led to case solvability. To better shape protocols and policies surrounding cold cases, research into the reliability of effective methods is needed.

This study is a systematic assessment using qualitative and quantitative methods to investigate cold cases analyzed by the USF-FAL in the years 2015-2017 ($n=58$ cases). These cases have dates of discovery that range from the years 1967-2016 and had been previously analyzed at the time of discovery. They are predominately from Florida ($n=36$) but also represent cold cases from nine additional states. Nineteen individuals died from “homicidal violence” and 26 have an “undetermined” manner of death. The “undetermined” cases include numerous examples of disposal, such as dismemberment, concealment, burning, and the use of sulfuric acid and, in many cases, were reclassified as Homicide following the reanalysis.

The methods utilized in the reanalysis of cold cases are reviewed in the current study to assess their effectiveness and accuracy. These include: collaboration with law enforcement and Medical Examiners Offices (MEOs) to select cases for reanalysis; researching existing primary documents and photographs for leads; resubmission of fingerprints; locating and exhuming human remains; reassessing the biological profile using 3D-ID and other skeletal aging methods; chemical isotopic analysis; facial imaging; resubmission of DNA samples; and the use of the National Missing and Unidentified Persons System (NamUs).

Of the 58 cases investigated, seven were identified. In total, nine had fingerprint cards for resubmission. Eighteen cases were buried in John/Jane Doe graves and had to be exhumed. Although a total of 22 graves were unearthed in the search for the unidentified, three decedents were not located due to the loss of cemetery records. Skeletal analysis included reassessment of the biological profile for 41 cases, isotope sampling and georeferencing of 51 cases, and imaging for 34 cases. As a result, seven have been identified via fingerprint resubmission ($n=4$) and DNA analysis ($n=3$). The qualitative assessment of mapping of geochemical referencing and forensic imaging will be presented.

These findings demonstrate the utility for the use of a multidisciplinary approach for solving cold cases. Case reviews, fingerprint and DNA (re)submissions, updated biological profiles, chemical isotopes, and forensic imaging are shown to contribute to case solvability by providing new leads and increasing public interest in an otherwise stale case. In the face of seemingly impossible caseloads, multidisciplinary methods are shown to be of critical importance for addressing the issue of missing and unidentified persons.

Cold Case, Unidentified Persons, Forensic Anthropology