



D30 Heating Up “Cold Cases”: Research and Service for Unsolved Cases of Human Identification

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After attending this presentation, attendees will be presented with examples of cold cases undergoing reinvestigation utilizing methods that were not readily available during the initial investigation. The objective of this presentation is to establish a systematic and comprehensive set of methods applicable to unsolved cases involving unidentified human remains, as well as, to present a comprehensive model that includes the latest tools and technologies for investigating unsolved cases of human identification. Attendees will be presented with examples of field, laboratory, and morgue methods for ongoing investigations.

This presentation will impact the forensic science community by providing an example of a collaborative, multidisciplinary approach to research and casework involving unidentified human remains, and by also providing examples of collaborative, multidisciplinary research and casework involving unidentified human remains. Specifically a protocol is presented for cold case investigations with particular attention to the challenges that may arise when new methods are presented in court.

Over the past year, a service oriented research initiative among the Forensic Anthropology Laboratory at the University of South Florida and the Hillsborough, Pinellas, Pasco, and Hernando County Medical Examiner's Offices in Florida was undertaken in collaboration with local law enforcement agencies throughout the Tampa Bay region to apply a

range of methods to unsolved cases dating back to 1969. The goals for this project were to: (1) assist local medical examiners with unsolved identification issues; (2) systematically apply a comprehensive set of methods to all unsolved cases in the region; and, (3) document osteological, chemical, burial and postmortem factors about each case to develop a baseline of data relevant to the local population and natural environment in the area. Through the course of this project, a wide variety of field, morgue, and laboratory methods were applied and the preliminary findings are discussed in this presentation.

In addition to analyzing unidentified skeletal remains retained by the medical examiner's offices, this project exhumed graves of unknown individuals buried in numerous cemeteries as “John” or “Jane Does.” Ground penetrating radar was used to accurately document each exhumation case and to establish the parameters for grave excavation. A full osteological analysis was completed for each case to re-evaluate the initial parameters of identity, such as age, sex and ancestry. Some of the earliest cases had not previously been analyzed by an anthropologist. Two programs were used to evaluate the biological parameters for each individual. Additionally, bone and tooth samples for DNA and chemical isotope analysis for each case was completed. In cases where an original sketch or photograph from the autopsy was not available, 2D facial composites were created. To date, more than 35 cases have been included in this project.

Previously published research on unidentified remains in Florida showed that many individuals come from immigrant, migrant, or at-risk groups. In this investigation, several trends emerge among males and females in terms of the demographic profile, the type of original burial site, cause and manner of death, and the rates of decomposition given the burial context. Initial analysis shows that males ($n=13$) and females ($n=13$) representing African-American ($n=7$), European-American ($n=5$), Mesoamerican ($n=4$), South American ($n=6$), and Circumcaribbean ($n=1$) ancestry. Currently, craniometric analyses indicate there are more African-American and South American individuals found in the Tampa Bay region with distinct trends among males and females.

The methods and results of this project are presented here. Additionally, legal issues that have challenged anthropological methods in court in these districts are outlined. The ways in which regionally specific data and case studies can offer demonstrative examples in court are addressed. Finally, this project resulted in new course development at the University of South Florida for graduate students in Anthropology. The new course is a service learning course in which students work with community partners throughout the medicolegal community on the problems of missing and unidentified persons. The ability of anthropologists to use their research and casework for education is also critical for practitioners who work in university settings. This project reflects forensic anthropology today and the changing role of anthropologists in death investigations.

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