



E51 Successful Planning for a Multidisciplinary Approach to Human Remains Recovery and Analysis in a Cold Case Homicide

Zachary R. Lysek, BA, Northampton County, Coroner's Office, 146 Country Club Road, Easton, PA 18045; Thomas A. Crist, PhD*, Utica College, 1600 Burrstone Road, Utica, NY 13502; and Dennis P. Asen, DDS, 201 N Iriquois Avenue, Margate City, NJ 08402*

After attending this presentation, attendees will understand the complexity of planning and budgeting for the recovery of clandestinely buried human remains, mobilizing an appropriate team of forensic scientists to identify the person and determine the cause and manner of death, and preserving the chain of possession of associated evidence for its effective presentation in court.

This presentation will impact the forensic science community by demonstrating how well-coordinated planning and execution of the multiple tasks involved in the recovery and analysis of skeletonized human remains over a period of 12 years resulted in the conviction of the perpetrator of a long-unsolved homicide.

In 2000, a 28-year-old man went missing from the house he shared with an older male friend and his family in rural Moore Township, Northampton County, PA. The friend continued to collect the missing man's disability checks through forgery for two years and then vacated the property in foreclosure. A search of the property in 2002 failed to locate human remains, but in 2004, construction excavations following demolition of the house unearthed a human tibia and three hand bones among dozens of animal bones. Upon identification of the bones as human by the consulting forensic anthropologist, aerial photography and Geographic Information System (GIS) mapping were used to narrow the parameters of the search location. A team of investigators from the Moore Township Police, the Pennsylvania State Police, and the Northampton County Coroner's Office then conducted systematic excavations following standard archaeological procedures. Sifting of more than 500 tons of soil over the next month necessitated the rental of a portable, industrial screener that was brought to the site. With the assistance of a cadaver dog, the field recovery team located previously disturbed, skeletonized remains of a human adult wrapped in a blue plastic tarp that had been buried more than five feet below the ground surface.

Analysis of the remains indicated that they represented a male of European descent who was 25-30 years old at death. A circular defect in the left temporal indicated a close-range gunshot wound that was almost certainly fatal. Radiography of the body mass prior to analysis revealed a .380 caliber projectile. Possible cut marks from a thin-bladed knife were present on at least one vertebra. Damage to the ribs and the left upper limb bones required distinguishing peri-mortem from postmortem insults. Analysis by the consulting forensic dentist of a mandibular fragment led to removal of a tooth for DNA analysis which in 2010 confirmed the identity of the remains as the missing young man. His friend was arrested and charged with first-degree homicide and disability check fraud. Based in part on the testimony of the coroner and the forensic anthropologist, he was convicted in 2012 and sentenced to life in prison without the possibility of parole.

This case study illustrates how the pre-planned availability of a multidisciplinary team of forensic specialists and crime scene investigators facilitated rapid responses to changing conditions at the recovery site, provided maximum flexibility in deploying the appropriate financial and technical resources, and fostered the resolution of a cold case homicide that had remained unsolved for more than a decade.

Crime Scene, Skeletal Remains, Cold Case Homicide

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