



F34 The Dog Alerts But There's No Body: The Science of Human Remains Detection — K-9 Evidence for the Courtroom

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The goal of this presentation is to educate attendees concerning the current state of cadaver canine detection science and the elements of a sound, defensible K-9 program.

This presentation will impact the forensic science community by informing attendees regarding the current state of science of human remains detection canines that pertains to the reliability and defensibility of their performance.

Cadaver dogs, referred to by a variety of different names, are trained to locate human remains. Lacking a single, unified standard, the reliability of cadaver dog teams varies widely. Properly trained, they are able to detect human remains that may be verified using physical processing (e.g., blood), but analytical tests for all types of human remains do not exist (e.g., human decomposition). Thus, the validity of an alert by a cadaver dog in which no means of corroboration or validation is possible can and has come into question in a court of law.

Cadaver dogs have been used with success for decades, and their use, particularly in high-profile criminal cases, is increasingly reported in popular media. False positives are rarely reported and on deployment, alerts cannot always be resolved. While the scientific literature on cadaver dog capabilities is sparse, their utility remains robust. Peer-reviewed studies point to a discrete set of compounds detectable from human remains, particularly intact decedents; however, those results represent only what the collection and analysis methods can detect, as interpreted by an analyst. No study has linked machine-detected human remains odor to what a canine recognizes as human remains odor.

Knowing the precise chemical composition of human remains odors is not necessary for a detector dog to be reliable, accurate, and precise. Furthermore, what constitutes “reliable” varies in the legal realm and particularly as applied to narcotics K-9s and probable cause. Cadaver dogs are not typically used for probable cause because their trained target odors may be present for non-nefarious reasons (e.g., a bloody nose). In fact, evidence identified by a cadaver dog and corroborated as correct may not have relevance to a case, although the dog’s identification of human remains was correct and independently verified.

When a cadaver dog alerts and that alert is unsubstantiated, for any number of reasons, the validity of the alert can be called into question. Published studies have demonstrated the sensitivity and specificity of dogs to detect residual odors, including human remains. Just as with any other technology, not all dogs are trained to the same level, using appropriate procedures to eliminate bias, or to the same range of types of human remains.

This presentation will include discussion of the types of cadaver dogs and their appropriate uses in criminal cases. The current state of science on cadaver dogs will be presented in addition to more broadly relevant science that applies to any detection canine team and program. Key components challenged in court will include residual odor, bias, and training protocols for teams that deploy for criminal cases.

Canine, Detection, Odor