



F37 The Total Team: The Investigators, Forensic Scientists, and the Attorneys in a Capital Case From Kansas

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After attending this presentation, attendees will learn that the total team concept is essential to establish truth and justice in a capital case.

This presentation will impact the forensic science community by illustrating how: (1) each individual must concentrate on their specific duties; (2) each must collaborate together; and, (3) the attorneys must assemble the individual pieces of the puzzle into a picture detailed enough for the jury to interpret.

In early May 2013, the Franklin County Sheriff's Office (FCSO) was contacted regarding a body found in an outbuilding at a rural residence in Ottawa, KS. Also, a 22-year-old female, who was known to frequent the residence, and her 18-month-old daughter were missing. The FCSO requested assistance from the Johnson County Sheriff's Criminalistics Laboratory (JCCL). Officials searched the house and two additional bodies were found, one of whom was the woman reported missing. The Federal Bureau of Investigation (FBI) and more than 30 other agencies assisted with this investigation. The 18-month-old baby girl's body was found days later in a suitcase in a creek in Osage County, KS. In total, there were five scenes where forensic evidence was recovered, numbering more than 1,000 pieces. The FC District Coroner requested the forensic pathologist from the Frontier Forensics laboratory to join him at the rural scene.

The Crime Scene Investigation (CSI) supervisor recognized that the male victim in the house was covered by thousands of maggots. The victim in the outbuilding, who was covered with a tarp, was also showing an infestation of larvae, mainly in the head area. Because the CSI supervisor had been trained by a Forensic Entomologist (FE), he knew the procedures necessary for gathering the proper entomological specimens and requested assistance from an FE. The FE called upon two additional FEs and a forensic climatologist. What was peculiar about the two victims in the house was that the male possessed tens of thousands of maggots, while the female had no insect evidence on her at all.

The primary indicator insect species for the victim from the outbuilding was one of the blue bottle flies, *Calliphora vicina*, a cool-weather species. The forensic climatologist was called in to calibrate the outbuilding scene to the weather station. The forensic climatologist adjusted the inside temperatures, which the FEs used for determining a range of when colonization most likely occurred (namely, as late as April 20 to as early as April 18, 2013).

The primary indicator insect species from the male body in the house was the black blow fly, *Phormia regina*. From photographs of the remains and scene, huge numbers of maggots were observed on the remains (tens of thousands), indicating hundreds of female flies must have been present over a period of a few days with warm temperatures and had access to the remains for extensive egg deposition. These warm temperatures only occurred from April 28 through May 1, 2013. Investigators determined that, during this time, unscreened windows were open. Therefore, reliance on weather patterns, as opposed to calculating the period of colonization, was used to estimate the time of death. A similar approach was used to determine when the 22-year-old female was murdered.



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By May 2, temperatures were well below the lower flight limit. With cool temperatures, there was a lack of flight activity; also, covering the remains with clothing and the enclosed structure provided the reasons why this victim had no insect colonization. The female was killed and immediately covered during the afternoon of May 1, then temperatures dropped to below egg-laying activity levels until discovered.

With the vast amount of evidence collected, the multiple crime scenes involved, and with every death occurring at a different time, it was challenging for the prosecutor and FS team to reconstruct events to make sense to a jury. This challenge is why it is critical that forensic scientists work as a team when prosecuting complex cases, and why attorneys, whether prosecution or defense, need a comprehensive working knowledge of the forensic sciences.

Blow Fly, Climatology, Capital Murder