B207 The Importance of a Combined DNA Index System (CODIS) DNA Hit Follow-Up: A Case Review of Secondary DNA Transfer and the Individual Wrongfully Charged With Murder

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The goal of this presentation is to share the case specifics of likely the first documented case of secondary DNA transfer of an innocent individual at a crime scene. The discovery of this individual's DNA profile on the fingernails of the decedent incorrectly implicated him as one of the perpetrators of the homicide, consequently forcing him to serve several months in county jail before his alibi was discovered. This case highlights the extreme importance of conducting proper follow-up investigations once an individual is associated to a crime scene via DNA evidence.

This presentation will impact the forensic science community by sharing a case review in which DNA transfer wrongfully implicated an individual of murder and by explaining how the presence of an individual's DNA profile, especially when first determined through a CODIS DNA hit, must be properly investigated.

DNA transfer is the presence of an individual's DNA profile on an item even though the individual never directly came into contact with the item. The mode of transport can be secondary or tertiary in nature and has been documented in mock crime scene scenarios in the relevant literature. DNA transfer has long been discussed in the context of forensic evidence and used to theoretically explain the presence of DNA profiles at crime scenes. This concept has become increasing important, especially with the rise of contact DNA testing of very small amounts of DNA.

The homicide case discussed in this presentation is likely the first documented case of secondary transfer of DNA evidence on an actual crime scene sample. The robbery-homicide rattled the quiet community, especially since there were no leads and the victims initially appeared to be completely random targets. The Santa Clara County Crime Laboratory was tasked with examining several items of evidence from the scene, including samples collected from the decedent's body, duct tape used to bind victims, and several disposable gloves found throughout the house. The identity of the individual, Lukis Anderson, whose DNA was transferred to the fingernails of the decedent, was discovered through a DNA hit. At the time of the homicide, he was a transient of downtown San Jose with a petty criminal history. Two other individuals were also associated to the crime scene through DNA hits on various items of crime scene evidence, including duct tape and disposable gloves. The latter two individuals had extensive criminal histories and were known gang members from Oakland, CA, with clear ties to the victim once further investigations were conducted. On the other hand, follow-up investigations revealed that Anderson did not have any known associations with the other two individuals or with the victims. Further investigation by his defense attorney revealed that he was incapacitated at a local hospital at the time of the homicide, thereby proving his innocence.

Following the discovery of this information, Anderson was promptly released from county jail and cleared of all charges. The crime laboratory conducted additional Y-chromosomal Short Tandem Repeat (Y-STR) testing that confirmed Mr. Anderson wasn't connected to this crime via an adventitious, or false, DNA hit. Once news of this circumstance became public record, the media began to speculate on the explanation of the presence of Anderson's DNA on the decedent's fingernails, including accusing the DNA criminalist of using improper techniques and contaminating the fingernails with Anderson's DNA profile. Ultimately, the Santa Clara County District Attorney's

Office discovered that the same paramedics that responded to the homicide scene also treated Anderson earlier that evening. It is thought that a medical apparatus called a pulse oximeter, which attaches to the fingertip of the patient, was the mode of transport of Anderson's DNA profile to the decedent. Without the proper follow-up investigations, it is unclear what Mr. Anderson's fate would have been, as he likely could have been wrongfully convicted of murder. Thankfully, the truth was discovered and he was cleared of all wrongdoing. The forensic science community must learn from this case that DNA transfer is not just a theory used to distract juries, and thorough investigations following a CODIS DNA hit should be undertaken by the proper authorities to provide supporting information as to the individual's criminal involvement.

DNA Transfer, CODIS, Wrongful Arrest