

# FORENSIC RESEARCH AND TECHNOLOGY

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### Forensic odorology: A silent and forgotten trace evidence source in criminal investigations

**Statement of the Problem:** The use of human scent as a source of trace evidence for investigative purposes is experiencing a renaissance of valuable forensic research pivotal to law enforcement applications, specifically in the realm of canine detection tools. Various challenges have surfaced in courts of law across the world that questions the validity and reliability of this technique that employs biological detectors to alert to human scent traces. There is a limited body of scientific literature which pertains to the specific human odor signatures a canine alerts to when it makes a positive scent match with a subject. The available scientific studies investigating the origin and definition of human odor have focused mainly on the composition of human sweat in relation to hygiene and biological pathways rather than a more general description of human body odor. Thus, the identification and characterization of key human odor volatiles play an essential role in understanding human scent evidence as an individualizing physical trait.

**Methodology & Theoretical Orientation:** An overview of the state of forensic odorology both nationally and abroad is presented giving specific cases and experiments that focus on the use of human odor as evidence in forensic applications.

**Findings:** The usefulness of this trace evidence is highlighted by depicting operational applications of the use of human scent and canine teams. The research highlights the need for more practical laboratory investigations to understand and validate active canine operations.

**Conclusion & Significance:** Forensic odorology has witnessed a lengthy developmental process leading to its current status as an evidentiary tool. With the help of scientific validation efforts, this technique may prove to be a powerful tool within forensic investigative processes worldwide.

### Biography

Paola A Prada received her PhD in Chemistry with a Forensic Science concentration from Florida International University in 2010. She was awarded the 2010 Intelligence Community (IC) Post-doctoral Research Fellowship, funded by the Office of the Director of National Intelligence. Her studies have united interdisciplinary areas such as chemistry, animal behavior and national security to address issues critical to effective intelligence and defense capabilities. She has worked with both national and international police/government agencies to help develop better instrumental and training techniques in various areas of odor detection. She is the Author or Co-author of numerous journal publications, book chapters, and one book dedicated entirely on human scent evidence. She is a Member of the American Chemical Society and the American Academy of Forensic Sciences.

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