



## Criminalistics Section – 2006

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### **B106 Examination of Gunshot Residue Patterns on Dark Clothing Using the Video Spectral Comparator 2000 for Firing Distance Determination**

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After attending this presentation, attendees will gain a greater understanding of the effect of this research on the functioning of forensic scientists and investigators.

This presentation will impact the forensic community and/or humanity by leading to a wider use of the Video Spectral Comparator 2000 by firearms examiners in gunshot-residue detection and firing distance determination. My findings demonstrate that this method is more efficient and economical than conventional chemical and infrared photographic techniques.

Determination of the muzzle to target distance is often a critical factor in criminal and civil investigations involving firearms. When possible, firearms examiners use the suspect firearm and the same type of ammunition to make test fires from different distances into targets. This enables them to approximate the gunshot residue pattern dimensions found on the clothing and/or body of the victim. However, if the clothing worn by the victim is dark and/or bloody it may be difficult to see and record the gunshot residue pattern. In 1988, Frank Trostle of the Madison Wisconsin (USA) Police Department published an article "Photographic Examination of Gunshot Powder Burn Patterns Through the Use of Infrared Film" [JFI, 1988; 38(2); 57-61] discussing a solution to this problem. Trostle stated: "By extending the photographic spectrum to record the effects of reflected invisible infrared radiation, an investigator can sometimes obtain evidence that is not normally visible due to the faintness of the stain or dark color of the fabric being examined." This poster will show that an instrument that is routinely used by forensic document examiners, the VSC 2000 (Foster & Freeman Ltd, Evesham, Worcestershire, UK), can quickly and easily visualize gunshot residue patterns without any specialized film and with immediate viewing, saving, and printing of the image.

**Firing Distance Determination, Infrared Imaging, Gunshot Residue Patterns**