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### E14 Science Matters: Putting Light on Facial Approximations

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After attending this presentation, attendees will understand the fundamentals of a forensic art facial approximation. These images are created for a detective to obtain a better understanding of what a suspect may look like. Detectives and investigators often request a facial approximation from the forensic artist in their agency.

This presentation will impact the forensic science community by raising awareness of the work that forensic artists perform for detectives and investigators. A large majority of this work goes beyond drawing a simple composite of a suspect. In this presentation, adjudicated facial approximation cases will display various angles and situations that often perplex a detective who is trying to determine what someone may look like. This informative presentation will include illustrations of the lighting of the human face.

The presence of light is how we are able to see the environment around us. It is a crucial source of information in producing a facial image for an investigation. How light bounces off a face and illuminates facial planes or features is critical information for the forensic artist. Light assists with the comprehension of what is seen and illuminates facial features, bad skin, or unusual marks. Specifically, the dynamics of direct light, indirect light, highlights, and reflected light on the various features within the face can provide indications of how those structures are built. This information can reveal itself even with grainy, blurry photos or video, to an extent.

The dark — an absence of light — also has a story to tell, one to which the forensic artist pays close attention. Dark areas can mean many things — an overhanging brow with deep-set eyes, skin discolorations, or facial hair, for example. The lack of light motivates the forensic artist to search for corroborating evidence in the various stills or video provided that will illuminate that particular area of the face. Looking through stills that show that specific area, under different angles and positions, may provide more information and “fill in the blanks” that were obscured by the dark.

Understanding the environment as a contributing factor is also vital. Cast shadows can influence an image or completely obscure the information that is sought. So, looking at the environment as part of the whole picture helps to understand what is being seen. The lighting is different if it comes from a modern street lamp rather than an older vintage street lamp. Not all lighting is equal; the lighting is different in a convenience store than a private residence. All these factors assist in or interfere with the forensic artist's efforts to interpret the face. The camera angle in the environment also plays a huge part; distortion is often a problem and must be factored in. In many environments, the camera angle is from above and captures not only the face but many other factors in the scene.

Forensic art is a rapidly expanding discipline that requires specialized training, above and beyond advanced drawing skills. The forensic artist is called on for many different skill sets that assist in the identification process. Applications relate closely with those of other disciplines of the forensic sciences, especially forensic anthropology, forensic odontology, and forensic psychology.

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#### **Forensic Art, Facial Approximations, Forensic Imaging**