

are temporarily being refrigerated in a truck/conex) and identification could be confirmed by another method prior to release of the remains; or in cases where there are no fingerprints, dental records, premortem radiologic or prior surgical records available; or in remains that are only partially damaged by burns with relative sparing of the globes.

Finally, there is a potential impact on biometric recognition discipline. For a long time, post-mortem iris recognition has been assumed as an impossible task due to hypothesized fast decomposition of the eye structures. This project shows, however, that these decomposition processes are slower than we assumed, and the iris recognition methods developed in this project allow for obtaining correct matches with high confidence for short low PMIs.

2. Participants

This project was led by the University of Notre Dame (UND), which developed a software tool supporting human examination of postmortem iris images. Dutchess County Medical Examiner's Office (DCMEO) collected new postmortem and perimortem iris images and verified the usefulness of the created software from the standpoint of medical examination requirements. Michigan State University (MSU) worked with UND on new computer vision methods for postmortem iris processing and matching. The developed methods were verified with data acquired from new 269 cadavers, including perimortem samples from one subject. The experiments with 283 human examiners analyzing perimortem and postmortem iris image pairs with different levels of difficulty were conducted by UND. Based on these results, the methodology for human expert-based analysis of the best-matching candidates was developed, based on the ACE-V protocol used for comparison of fingerprints. The project generated the first known to us complete system, including methodology and supporting software (with source codes) for forensic analysis of post-mortem iris images.

