

6th International Conference on

Forensic Science, Medicine, Research

April 27-28, 2026 | Dubai, UAE

Volume: 11

Emerging Technologies in Forensic Medicine: Improving Death Investigation and Evidence-Based Justice

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Technological innovation continues to transform forensic medicine through improvements in postmortem imaging, digital pathology, forensic toxicology, molecular diagnostics, and evidence preservation. This presentation explores recent developments in virtual autopsy, molecular biomarkers, advanced toxicological analysis, and forensic radiology that enhance the accuracy of death investigations. Artificial intelligence and digital pathology are improving interpretation of complex forensic findings while supporting evidence-based judicial processes.

The presentation also highlights multidisciplinary collaboration among forensic physicians, pathologists, toxicologists, and law enforcement agencies to improve criminal investigations and public health surveillance. Future directions include precision forensic medicine, digital laboratory automation, and machine learning applications in forensic diagnostics.

Biography

Derrick J. Pounder is Professor of Forensic Medicine at the University of Dundee, United Kingdom. His research focuses on forensic pathology, forensic toxicology, medico-legal investigations, and forensic education. He is internationally recognized for his contributions to forensic medicine and criminal justice.