



# Lichfield Science & Engineering Society

LICHFIELD **GARRICK**  
*Theatre & Studio*

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**8:00 pm on Tuesday 13<sup>th</sup> October 2015**

**in the Studio Theatre of the Lichfield Garrick, Castle Dyke, Lichfield**

## **Death and Murder: Their detection using scientific techniques.**

**Professor John P. Cassella,  
Department of Forensic Science and Crime Science,  
Staffordshire University**

In the United Kingdom last year alone 200,000 people were reported missing. Of those investigations 5,500 had a fatal outcome, ranging from suicide to 'accidents and misadventure' to violent crimes. Unfortunately, the number of people who disappear due to a homicide is indeterminate as to determine unequivocally a homicide a victim's body is required. Some of these will be the victims of murder, buried in makeshift graves.

A clandestine grave is typically a shallow burial hurriedly and manually created. Many remain undetected for some years or longer. The current suite of investigative techniques available to locate a clandestine grave includes fingertip searches, cadaver scent dogs (or victim recovery dogs) and geophysical techniques including Ground Penetrating Radar. These have been available for some time and the development of new techniques would further facilitate successful outcomes. The success of scent dogs suggests that chemical detection techniques have the potential to aid in the location of human remains.

Whilst there is some literature reporting which chemical markers may be useful, a lack of knowledge of the physical-chemical properties of possible compounds in human decomposition, such as putrescine and cadaverine, has meant that it is difficult to exploit fully their potential in investigations. These biogenic amines are not widely reported in the field of taphonomy but in the meat industry they are clearly used as indicators of decomposition. This study aims as part of a larger project to develop robust and reliable methods of detection and then to apply this research to the identification and the detection of a clandestine grave.

John graduated with a degree in Medical Laboratory Sciences and Chemistry from Leicester and a Doctorate in Orthopaedic Pathology from University College London, and worked in many of London's major teaching hospitals on a variety of medical research and teaching projects. He took up a post at the University of Central England as a lecturer in Biomedical Sciences and published widely in the area of medical and related biomedical sciences. He became a 'Reader in Biomedical Sciences' and also a 'Programme Leader' for the Forensic Science degree courses at the University of Derby in 2002, and in 2005 joined the forensic science team at Staffordshire University teaching forensic pathology, techniques of human identification and body recovery from disaster situations. John sits on a number of organisations that work at a national level in promoting the development of the delivery of forensic education and in improving the links between academia, the forensic industry and the UK Police Services.

For further information, please see our website at [www.LSES.org.uk](http://www.LSES.org.uk)  
Students and Members Free.

Visitors £5.00. Tickets are not issued in advance, please pay at the door.

Members must sign in. Those signing in before 7:50 pm will have precedence over all visitors.

This lecture is expected to finish by 10.00 pm.