

Institute of Geologists of Ireland / Geological Survey of Ireland Evening Seminar

Forensic Geology: The Applications of Geology to Crime, Police and Law Enforcement



IGI/GSI Evening Seminar

5pm, Thursday 2nd June 2016

Geological Survey of Ireland
(Haddington Road, Beggar's Bush, Dublin, Ireland, D04 K7X4)



Dr Laurance Donnelly

*BSc (Hons), PhD, CGeol, CSci, EurGeol, FGS, FGSA
Forensic Geologist & Police Ground Search Adviser*

Further information attached.



ARUP

Programme

17:00-17:10:

Introduction

Marie Fleming, Institute of Geologists of Ireland & Arup

17:10-17:40:

Forensic Geology in Ireland

Dr. Alastair Ruffell, Queens University Belfast

17:40-18:10:

Search and Trace Evidence

Prof. Lorna Dawson, James Hutton Institute

18:10-18:40:

QEMSCAN

Prof. Duncan Pirrie, Helford Geoscience LLP

18:40-19:10:

GIS in Forensic Geology

Dr. Jennifer McKinley, Queens University Belfast

19:10-20:00:

Keynote Lecture: Forensic Geology: The Applications of Geology to Crime, Police and Law Enforcement

*Dr. Laurance Donnelly, International Union of Geological
Sciences, Initiative on Forensic Geology & Arup*

20:00-20:10

Closing Remarks

Koen Verbruggen, Geological Survey of Ireland

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for this event
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the link
below.

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Forensic Geology: The Applications of Geology to Crime, Police and Law Enforcement

Dr. Alastair Ruffell

Reader in Geology, School of Geography, Archaeology & Palaeoecology, Queen's University Belfast

Alastair is a Reader at Queen's University, Belfast and works mainly on geoforensics, in two areas. First is the use of remote sensing and geophysics in searching the ground for toxic waste, human bodies or buried weapons/contraband water and peat (wetlands). Second is the analysis of trace geological evidence for criminal investigations.

Professor Lorna Dawson

*Head of Forensic Soil Science
James Hutton Institute*

Professor Lorna Dawson, Head of Forensic Soil Science at the James Hutton Institute, is a visiting Professor of Forensic Science, RGU, Chartered Scientist, FISOilSci, FRSA, and leads a team of experts in soil, mineralogy, organic and inorganic chemistry, plant identification (morphology, DNA), organisms (diatoms, fungi, bacteria, nematodes etc) and molecular biology, along with geographers and statisticians to provide a range of complementary forensic characterisations, dependent on the individual case question. Lorna has published over 100 refereed publications and over 100 reports, leads forensic research and analysis, and proves unparalleled experience in the analysis and characterisation of soils, plants, waters and other ecological/environmental components, as

well as scene and expert witness experience. She is currently treasurer of the IUGS-Initiative on Forensic Geology, a registered expert witness since 2007 with a diploma in both Criminal and Civil law. She is a Registered Advisor with the National Crime Agency, a member of the General Committee of the British Association of Science, Advisor on the Environmental Protection Land Expert Advisory Group and an Advisor on the CBRN FW7 GIFT project.

Professor Duncan Pirrie

Helford Geoscience LLP

Duncan Pirrie has worked on geological trace evidence analysis in over 100 serious crime investigations and pioneered the use of automated mineral analysis as a tool in forensic geoscience.

Dr Jennifer McKinley

Senior Lecturer in the School of Geography, Archaeology and Palaeoecology, Queen's University Belfast.

I am a Chartered Geologist and member of the Geological Society London Forensic Geoscience Group. With a primary degree and doctorate in geology, my research has focused on the application of spatial analysis techniques, including geostatistics and Geographical Information Science (GIS), to soil geochemistry, environmental and criminal forensics and airborne geophysics.

I currently hold a number of roles including: Executive Vice President of the International Association of Mathematical Geoscientists (2012-2016); recently elected as President for 2016-2020; and Secretary for the Royal Irish Academy Geosciences and Geographical Sciences committee. As a member of the Forensic Geoscience Group of the Geological Society of London and Communications Officer of the International Union of Geological Sciences (IUGS) - Initiative on Forensic Geology (IFG) I develop the implementation of geoinformatics in forensic geoscience.

This has included involvement in delivering a series of knowledge transfer lectures and training workshops with the Australian Federal Police, the Brazilian Federal Police at the Second Iberoamerican Workshop & Training in Forensic Geology, and at the Russian Federal Centre of Forensic Science (RFCFS) of the Ministry of Justice of Russia. I have authored more than 100 scientific articles, including co-authoring the book 'Geoforensics' with my colleague Dr Alastair Ruffell. I see my role in forensic geoscience as increasing awareness and knowledge of the application of GIS, spatial technologies and spatial analysis in the collection and analysis of evidence, sampling at crime scenes, search methodologies and use of databases.



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Forensic Geology: The Applications of Geology to Crime, Police and Law Enforcement

Keynote Lecture Forensic Geology: The Applications of Geology to Crime, Police and Law Enforcement

Dr Laurance Donnelly

BSc (Hons), PhD, CGeol, CSci, EurGeol, FGS, FGSA

Forensic Geologist & Police Ground Search Adviser, Chair, International Union of Geological Sciences, Initiative on Forensic Geology (IUGS-IFG) & Arup, Manchester, UK

Dr Laurance Donnelly is a professional, chartered geologist, chartered scientist and European Geologist. He has a First Class Honours Degree in Applied Geology (Mining & Mineral Exploration) and a PhD in Engineering Geology & Geohazards (Fault Reactivation). He has 25 years' experience throughout the UK and world-wide in the fields of; mineral exploration, mining geology, engineering geology, mining hazards and geohazards. In 1994, he began applying geological techniques, not conventionally used by the Police, to search for a shallow, unmarked, homicide grave in a remote location. For the past 22 years he has worked on numerous high-profile cases advising the Police as a forensic geologist. In 2002, he was invited to Westminster Palace, Houses of Parliament, All-Party Parliamentary Group for Earth Science to give a presentation on Forensic Geology and the Moors Murders. In 2006, he established the Forensic Geoscience Group (FGG), of the Geological Society of London and served as its first Chair.

In 2008 he began working in collaboration with 'The Body Farm' in Knoxville, Tennessee, USA, to better understand the influences of geology on human decomposition. In 2010, the International Union of Geological Sciences invited him to establish an International Work Group on Forensic Geology, which has evolved into the IUGS Initiative on Forensic Geology (IUGS-IFG), where he serves as the Chair. In this role he has organised several knowledge transfer, capacity building and training events for police and federal agencies around the world. He is registered as an Expert Adviser to the UK Police and National Crime Agency (NCA). He has approximately 230 publications, including peer reviewed papers, conference papers, magazine articles, public reports, and one book. Globally he continues to promote and pioneer the applications of geology to ground searches for burials. He is the recipient of awards for outstanding contributions to applied and forensic geology from the Institution of Mining & Metallurgy, Geological Society of London, Geological Society of America and Russian Federal Centre of Forensic Science at the Ministry of Justice of Russia, in Moscow.



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