



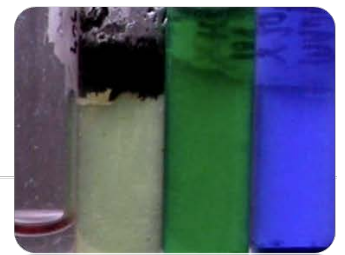
## Using Geology and Geographical Information System (GIS) in Forensic Science

*Presented by Dr. Alastair Ruffell and Dr. Jennifer McKinley*

- Date: 17<sup>th</sup> September 2015 (Thursday)  
Time: 6.30 pm to 7:30 pm  
Venue: Room 2610, Academic 2 Building, City University of Hong Kong  
Seminar Fee: Free of charge  
Registration: No prior registration is required.  
For enquiry, please email Mr Fergus CHENG at [fergus.cheng@arup.com](mailto:fergus.cheng@arup.com)

### Synopsis:

The use of geology in forensic science (searching for buried objects, sampling at crime scenes or disasters, analysing of trace evidence) to provide examples of how research can impact and benefit society. This presentation will include an overview of the use of geology in forensic science and how this has developed internationally over the last 10 years. It will also be shown how Geographical Information System (GIS), which is well established for identifying hot spots and crime density mapping, can be used in collecting trace evidence and in formulating search strategies for missing persons, homicide graves or other objects buried in the ground.



## About the Speaker:

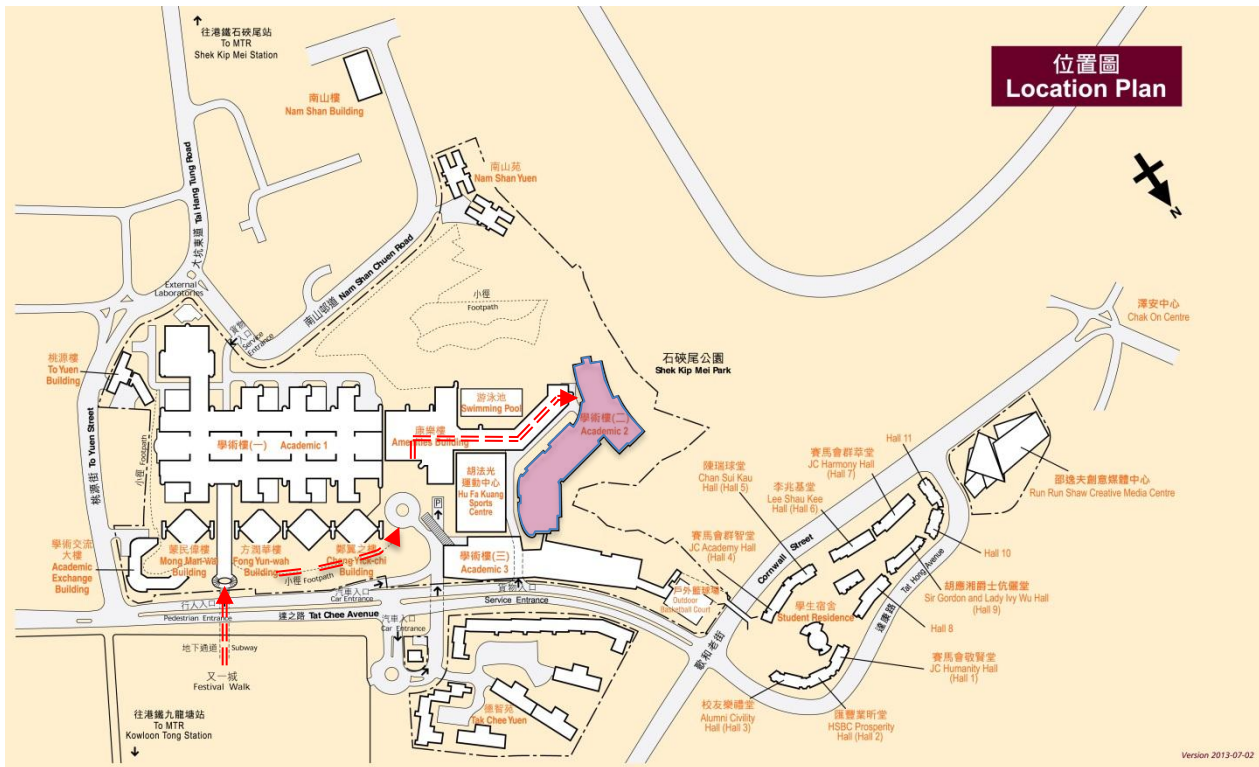
Dr Ruffell's research is mainly on geoforensics, especially the use of geophysics in searching the ground. Such searches may be for toxic waste, human bodies or buried weapons/contraband. He has a special interest in searching water and peat (wetlands). Over 30 years, his total (including collaborative) grant earnings have exceeded £9 million with over 125 peer-reviewed published papers and two books. He has completed over 130 major consultancy projects, mainly on Geoforensics and been involved in collaborative projects in 10 countries worldwide. Formerly Director of Education and Postgraduate Coordinator, his current roles are Health & Safety Coordinator; and member of Queen's Impact Group. The Geoforensics Impact Statement was deemed the highest 4-star rating in the UK Government Research Excellence Framework (2014). Voted as one of Queen's top ten lecturers. His teaching expertise includes geology, geomorphology, GIS, climate change, field classes throughout the UK, Ireland, Mediterranean, Geoforensics, Masters level geophysics with class sizes from 10 to 160 students.



Dr McKinley's research has focused on the application of spatial analysis techniques - geostatistics and Geographical Information System (GIS) - to soil geochemistry, environmental and criminal forensics, airborne geophysics and weathering studies. Interdisciplinary collaboration and strong partnership working with multiple stakeholders, underpins all of her research, culminating in international publications and conference presentations. As a Chartered Geologist and Trustee Council member of the Geological Society of London (GSL), her current international roles include Executive Vice President of the International Association of Mathematical Geoscientists (IAMG), Communications Officer for the IUGS-IFG (Initiative on Forensic Geology) and Secretary of the Royal Irish Academy Geosciences and Geographical Sciences committee. Over the last 11 years, her collaborative grant earnings have exceeded £5 million and she has published over 100 scientific articles, including peer-reviewed articles, book chapters, technical reports and 1 co-authored book (Geoforensics) along with numerous international conference contributions. Dr McKinley has supervised 16 PhD research projects (10 completions) as primary supervisor and as co-supervisor. Her undergraduate and Masters teaching experience includes GIS, Spatial Analysis and 3D Visualisation in earth sciences, geomorphology, field class techniques with field course delivered in Ireland, the UK and the Mediterranean.



## Location Map to Academic Building 2



1. From Kowloon Tong MTR, take exit C for Festival Walk.
2. In Festival Walk, make your way to Level LG1. From there you should find a Pedestrian Subway which will lead you to CityU campus.
3. After walking through the Pedestrian Subway, go down the staircase on your right and follow the directional signs, you will find yourself walking under a covered corridor alongside the garden which will lead you to the University Circle.
4. Go along the covered walkway and follow the directional signs which will lead you to Academic 2