

# CFS Bulletin Issue 5: January 2014

## Message from the director...

We are looking forward to an exciting year here at the CFS. On the agenda for this year we will be working hard on new and ongoing research projects and on developing our events and engagement activities. We will also be working toward growing our capacity to be able to offer more opportunities for interaction between academics and professionals within the forensic science community. We are looking forward to hearing from you and working with you this year. As ever, do get in touch if there are particular things you would like to see on the agenda in the coming months, or if you are interested in collaborative opportunities to further excellent research and best practice in forensic science. With very best wishes for a happy and productive 2014.



- Dr Ruth Morgan

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## DNA as trace evidence: New Horizons at the CFS

The CFS is fast developing a reputation as the field-leader in the generation of empirical data to enable the robust interpretation of forensic trace evidence for use in criminal cases. New research at the CFS aims to generate such data to assist the interpretation of trace DNA evidence.

Trace DNA is DNA recovered from a crime scene that cannot be attributed to an identifiable body fluid or tissue. Such DNA can come to be present on a surface by either direct or indirect transfer from its source. Direct transfer of DNA to a surface includes both contact and activities within the vicinity of an item, such as speaking, coughing, and sneezing. Indirect transfer occurs when DNA from an individual comes to be on an item via

an intermediary surface, such as via another person's hand or a door handle, for example. In the evaluation of trace DNA in criminal cases, it is important to consider the full range of possible mechanisms of transfer to offer the best possible intelligence or evidence. My experience in casework has shown that some forensic practitioners will assert an opinion on the most likely mode of transfer by which DNA came to be on a surface of interest, whilst others will not. In instances where such assertions are made, the quantity of DNA recovered from a crime stain and/or the quality of a DNA profile obtained is often relied upon. However, having reviewed the available published data from trace DNA experiments, I contend that there is currently insufficient empirical data to provide a contextual evidence base to support such opinions.<sup>1</sup>



A collaborative venture between the Department of Security and Crime Science, the Department of Genetics, Evolution and Environment, and the Institute of Archaeology has resulted in the construction of the 'UCL Ancient DNA Laboratory'. This 'clean' facility has the UV and HEPA-filtered positive pressure conditions necessary for all types of forensic DNA analyses and so is ideally suited to conducting trace DNA experiments with the minimum risk of contamination. The CFS is now embarking on a new programme of research that is anticipated to shed light on the transfer of trace DNA to assist in its evaluation in casework. For more details, please [contact me](#), [Dr Ruth Morgan](#) or [Prof Mark Thomas](#).

**Dr Georgina Meakin**  
(UCL CFS)



<sup>1</sup>Meakin & Jamieson, 2013, DNA transfer: Review and implications for casework, *Forensic Sci Int: Genet* 7:434-443

**EdgeHill University Research  
Seminar Series  
5<sup>th</sup> February 2014**

From Laboratory to Court: Exploring the use of genetic technologies in the investigation of crime

**Speaker: Dr Georgina Meakin**



### **UCL Ancient DNA Laboratory**

### **Forensic Science Society looks to the Horizon**

In 2011 Bernard Silverman released a report on research and development within forensic science. The report lists 8 key recommendations, the fourth on the list being: "The Forensic Science Regulator should act as a facilitator to bring together a consortium of appropriate representative bodies and other parties to organise a regular single cross-disciplinary forensic science conference." (pg 3) Forensic Horizons was subsequently launched by the Forensic Science Society in November 2012 as a response to the recommendation.

This year, Forensic Horizons has grown dramatically from its initial one-day programme in 2012. Over the course of three days (6-8 Nov), a wide range of topics were presented from many

house-hold names in the forensic community. Highlighting research, policy, and providing fuel for both retrospect and debate, the conference was informative and refreshing. Showcased was the multidisciplinary nature of forensic science. Each day was broken into several "tracks": Crime Scene, Biometric, and Digital Identity on Wednesday; DNA, Fingerprints, and Quality on Thursday; and R&D and Human Identification on Friday. Whilst choosing which session to attend was, at times, difficult, that difficulty was only due to the fact that there were so many interesting talks and interesting speakers on offer at any given time. Every session was well attended and delegates remained for the entire day rather than wandering off to the bar – a sign of success for any conference! Forensic Horizons has succeeded in transforming the UK forensic R&D conference scene by addressing key issues within the profession, and creating dialog amongst policy makers, scientists and law enforcement. By pushing us forward, Forensic Horizons fills the gap identified by the Silverman report, "providing a forum for the communication, development and validation of ideas, to act as advocates and

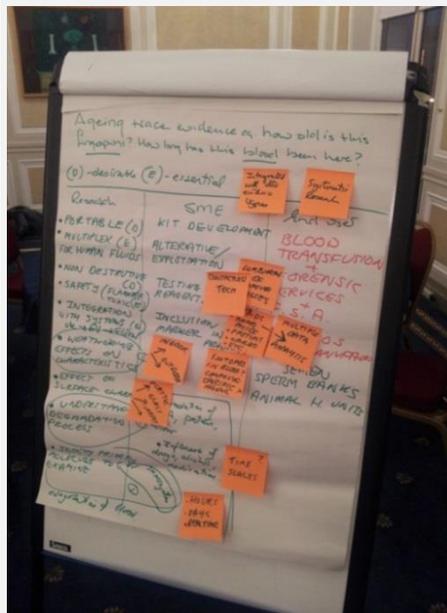
representatives of the field, and generally to be a focus for the relevant research and development communities.”  
 (Silverman Review: pg 2)

Forensic Horizons reaffirmed the value of professional conference attendance. The next conference is set for 2015 – mark your calendar!

- **Kimberlee Sue Moran**  
 (Director at The Center for Forensic Science Research & Education, Rutgers)

**Innovating research – Spotlight on Forensic Science**

On the 5th December I attended a research and innovation exercise at the Royal Society of Edinburgh on behalf of the Centre for the Forensic Sciences. The event brought together researchers and representatives of the Technology Strategy Board, the Forensic Science Special Interest Group (SIG) and Scottish Enterprise. Participants who had braved the storms and gales to attend the meeting were grouped by the organisers into six teams. The teams were provided with a list of ‘challenges’ or research themes and were tasked with formulating two research projects which were to address one or more of these challenges. By lunchtime, with the help of



facilitators (practitioners, as well as representatives from industry and the SIG), each of the six teams presented two project ideas, leaving the panel with the tough task of whittling down a list of 12 exciting project ideas to just six to be taken forward to the afternoon session. After a lunch break (during which most participants checked to see whether or not the roads or rails they were intending to use to get home had not been blown away by the gales) it was back to work. We were invited to join one of the six projects that best reflected our research interests and while many people switched from the projects that they had been part of in the morning, I chose to remain with my team on a project concerned with improving our ability to age

trace evidence. The afternoon was spent formulating the aims and objectives of the project, considering the likely avenues for industry support and identifying the end-users and their requirements. Along with researchers from a number of institutions including the University of Strathclyde, Teesside University and Sheffield Hallam University, I am currently involved in writing a proposal that will be considered, along with proposals produced by the other teams, by a panel to determine which projects should be taken to the next stage. At this stage, successful projects will be formally presented and funding will be discussed with research councils and SMEs. Overall, the event represented a positive initiative in facilitating forensic science research – fingers crossed for a positive outcome for our project!

- **Dr James French**  
 (UCL CFS)



## MSc Crime and Forensic Science

In September we were pleased to welcome our second cohort of 15 MSc students. In addition to their scheduled lectures, the CFS Seminars have given students the opportunity to hear from experts and practitioners.

During the Autumn term we were fortunate to have guest speakers including Sir Antony Hooper and Kay Linnell (Expert Witness Institute), Tracy Alexander (LGC Forensics), Kimberlee Moran (Center for Forensic Science Research & Education) and Mike Brown (Advanced Simtech). We are looking forward to a series of seminars delivered by [Principal Forensic Services](#) in the Spring term.

### Upcoming Events

**2014 American Academy of Forensic Sciences  
66<sup>th</sup> Annual Scientific Meeting  
Seattle, WA – February 17 –  
22, 2014**

**[Crime Scene Analysis and  
Victim Identification Forum](#) -  
2nd Annual Event  
Monday, 03 March 2014 09:00  
- 17:00  
Cineworld: The O2  
Peninsula Square  
London**



We are currently accepting MSc applications for 2014/2015. For further details and to make an application please see the [UCL Graduate Prospectus](#).

The Department is offering 14 bursaries for MSc students. Applications must be made by 30<sup>th</sup> April 2014 to be considered for one of these.

The Open Evening for MSc courses is 25<sup>th</sup> February 2014, and for prospective PhD students, 11<sup>th</sup> March. For further information and to register see the events page on the department website: [www.ucl.ac.uk/scs/events](http://www.ucl.ac.uk/scs/events)

## News

The Provost's Awards for Public Engagement, recognises the work by UCL Staff and Students in engaging with the public. The 2014 '[Student engager of the year](#)' went to Nadia Abdul-Karim, a SECRE-T-CFS student (UCL Security and Crime Science and UCL Chemistry) for her engagement work including [SuperLAB](#), her role as a Brilliant Club tutor, Student Mentor, STEM ambassador and the schools engagement activities she has developed. Congratulations Nadia!



## Get in touch

If you have any comments, suggestions or would like to contribute to future issues, please get in touch:

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