

Profiles of the Speakers

Professor Jim Fraser, Director of the Centre for Forensic Science

Jim Fraser is Professor of forensic science and Director of the University of Strathclyde's Centre for Forensic Science. He is Associate Director of the Scottish Institute for Policing Research, and a Past President of the Forensic Science Society. Previously he was Head of Forensic Investigation for Kent Police, Head of Forensic Biology with Lothian & Borders Police and a senior forensic scientist with the Metropolitan Police. He has extensive experience as an expert witness in criminal courts in the UK and has been involved in many high profile cases (e.g. Damilola Taylor, Rachel Nickell, Shirley McKie), as an expert witness, reviewer or adviser. He also has significant experience in strategic and policy matters in relation to forensic science in the UK and internationally. He has advised a range of agencies on forensic, scientific and investigative matters, including the police organisations in the UK and abroad, the Home Office, the Scottish Parliament and the Westminster Parliament.

Jim is a member of the Scottish Government Forensic Data Working Group, Chair of the Scottish Fingerprint Symposium, a member of the Forensic Science Regulator's Fingerprint Specialist Group and former Chair of the Digital Forensics Specialist Group. His teaching and research interests focus primarily on the role of science and technology in criminal justice. He is the co-editor (with Robin Williams) of the Handbook of Forensic Science (Willan) and author of Forensic Science - A Very Short introduction (OUP).

Karen Squibb-Williams, MA (Oxon), Barrister, Lead Criminal Justice System Lawyer

Karen is a Barrister with long experience as National Prosecution Policy lead for Forensic Sciences (including DNA & Fingerprints), Expert Witnesses, Non-Accidental Head Injury Cases (formerly Shaken Baby Syndrome), Retention of Exhibits / Biometric Data, Pathology, and Disclosure. Having left her criminal practice in Chambers, in 2001 Karen joined the CPS as a front line prosecutor. She spent some time with regional responsibility for implementing national policy on domestic violence prosecutions. This was followed by a 6 month secondment to Her Majesty's CPS Inspectorate.

In 2004 Karen moved to CPS Headquarters and took over the national lead for Forensic Science prosecution policy. She was responsible for introducing radical new approaches to cases involving DNA matches and has made significant progress in raising the profile of prosecution requirements across a numbers of agencies. Her approach seeks to combine the legal requirements of the UK criminal justice system with maximising the efficiencies forensic science can offer, as practically and meaningfully as possible.

She sits on a number of Boards and key Committees including: Home Office Forensic Science Transition Board (dealing with the closure of the FSS Ltd.), the Pathology Delivery Board, (the Home Secretary's Register of Forensic Pathologists) several of the UK Forensic Science Regulator's specialist groups, she is Chair of the Regulator's DNA Specialist Group.

She specialises in approaching scientific evidence in the criminal justice system as a Case Management issue seeking agreement rather than solely as a complex adversarial experience for the jury. As an elected member of the General Council for the Bar 2002 - 2009, she served on a wide range of committees, including the Professional Conduct Committee.

Andy Williams, Forensic Specialist

Andy has a unique skill set combining operational forensic experience, an understanding of the commercial development of the forensic market in the UK together with account management, business development and project management skills. He has successfully

delivered two international projects delivering quality management systems, DNA Databases integrated into Policing practices together with required legislative changes. His second project included a full laboratory build including equipment procurement and enhanced training in fingerprint enhancement, fraud investigation, Gun-Shot Residue analysis and drug databases.

As Product Group manager within the Forensic Science Service he led on the development of a number of value enhancing services aligned to the requirements of the most serious crimes including the Sexual Offences Service and a Critical and Major Incident Service. Most recently he managed a Transformation project in the Violent Crime area delivering significant improvements in processes through the deployment of lean sigma design tools and organisational re-design. Formerly a forensic scientist with the Forensic Science Service, where he worked for almost 25 years, he is now pursuing a career as an independent forensic consultant. More information can be found at <http://www.forestforensics.co.uk>

Christine Patch, Chair of British Society of Human Genetics

Christine Patch is Consultant genetic counsellor/manager in the clinical genetics department at Guys Hospital, London, UK and Reader in Clinical Genetics, Kings College London. She is a registered nurse and started in genetics in the late 1980's. After some 15 years of experience in clinical genetics she spent time as a researcher before moving back into the NHS. Her research interests have been in evaluating genetic tests and their implementation. Her role in the genetic clinic at Guys includes seeing patients and families, leading and developing the service and being R&D theme lead for genetic research. She is a member and past member of various professional and advisory bodies including the UK Human Genetics Commission and the Professional and Public Policy Committee of the European Society for Human Genetics. She chaired the HGC working group that produced the report 'More Genes Direct' and is the current chair of the British Society for Human Genetics.

Professor Frances Flinter, Chair in Clinical Genetics at King's College

Frances Flinter was awarded a personal chair in Clinical Genetics at King's College, London, in 2011 and has been a consultant in Clinical Genetics at Guy's & St Thomas NHS Foundation Trust for 16 years. Her clinical interests are focussed on preimplantation genetic diagnosis and inherited renal diseases. Frances is a member of the UK Human Genetics Commission, which gives the Government advice on human genetics with a particular focus on social, ethical and legal issues. Frances chaired an HGC-sponsored international working party that produced the report 'A Common Framework of Principles for direct-to-consumer genetic testing services' in 2010: <http://www.hgc.gov.uk/Client/document.asp?DocId=280&CAtegorYId=10>.

More recently Frances chaired another HGC working party considering ethical, legal and social issues relating to Preconception Genetic testing. Its report 'Increasing options, informing choice', is at: <http://www.hgc.gov.uk/Client/document.asp?DocId=315&CAtegorYId=10>. Frances was the elected chair of the UK Clinical Genetics Society from 2009 - 2011. As the Caldicott Guardian of Guy's & St Thomas she is responsible for data protection and confidentiality for all patients.

Allan Scott, Managing Director of the Evidence Partnership

Allan was a career Crime Scene Investigator for 26 years, becoming Head of CSI and Forensic Quality Assurance Manager with one of the largest police forces in the United Kingdom. Since his retirement at the end of 2002, he has been a consultant and in 2004 was appointed a lecturer at the University of Central Lancashire, School of Forensic and Investigative Sciences. Both roles have seen him teach, lecture and undertake consultancy in various places around the world. He has recently been engaged on monitoring work, on behalf of the European Commission, in respect of forensic

institutions in candidate states. In 2010 he established his own company that specialises in evidence management and is currently leading a collaborative work on the use of Automated Information and Data Capture Technologies (AIDC) to track and record exhibits from "crime scene to court".

Stuart Hogarth, Global Biopolitics Research Group, King's College London

Dr Stuart Hogarth is a member of the Global Biopolitics Research Group in the Department of Political Economy at King's College London. Stuart has a longstanding interest in the field of molecular diagnostics, with a particular focus on regulatory issues and the impact of gene patents on innovation. He has produced policy reports and briefings on these topics for Health Canada, the UK Human Genetics Commission (HGC) and the European Commission and has received a Leveraging / Collaboration Award from the FDA for his work in this area. Stuart has been on the organising committees for international meetings on genetic testing in the United States and Japan, participated in the drafting of the OECD's guidelines on quality assurance for molecular genetic testing and was a member of the UK working group convened by the HGC to develop a Common Framework of Principles for direct-to-consumer genetic testing. He is continuing his work on the regulation of genetic testing as a member of the FP7 EuroGentest network.

Professor Barbara Prainsack, Professor in Sociology and Politics of Bioscience

Barbara Prainsack is Professor in Sociology and Politics of Bioscience in the School of Social Sciences at Brunel University, West London, and Honorary Research Fellow at the Department of Twin Research & Genetic Epidemiology at King's College London. Barbara's work focuses on regulatory, societal, and ethical aspects of bioscience and biomedicine; in particular, she has looked at regulatory and social dimensions of DNA testing in medicine and in forensics. Most recently she published (together with Richard Hindmarsh) the first comparative edited volume on the governance of forensic DNA databases (*Genetic Suspects: Global Governance of Forensic DNA Profiling and Databasing*, Cambridge University Press, 2010). A new book on *Tracing Technologies: Prisoners' Views in the Era of CSI* will appear in 2012 (Ashgate; with Helena Machado).

Barbara is a member of the National Austrian Bioethics Commission at the Federal Chancellery in Vienna, Austria, and Chair of the Scientific Committee of the European Science Foundation's (ESF) *Forward Look on Personalised Medicine for the European Citizen* [<http://www.esf.org/index.php?id=7988>]. From February to July 2011, she held an AHRC/ESRC/Nuffield Foundation Fellowship to work with the Nuffield Council on Bioethics (NCoB) on 'Solidarity as a Core Value in Contemporary Bioethics'. A report resulting from this Fellowship will be launched by the NCoB in November 2011.

Summary of the Presentations

A review of DNA legislation, policy and practice in Scotland

Professor Jim Fraser, Director of the Centre for Forensic Science

In 2006 the Scottish government commissioned a review of the effectiveness of DNA and fingerprint legislation in Scotland. The main aim of the review was to assess the operation and effectiveness of the legislation governing police powers for the acquisition, use and destruction of DNA (and fingerprints). An important aspect of the review was to consider the significance and potential benefits of temporary retention of DNA and fingerprint samples from individuals who had been prosecuted for serious offences but not convicted. This presentation describes the findings of this review and their significance for the subsequent development of new legislation in Scotland. It also considers the relevance of these findings for other jurisdictions, particularly those in the UK.

The Impact of the Commercialisation of the Forensic Marketplace on Practical Aspects of DNA Testing

Andy Williams, Forensic Specialist

It would be difficult to talk about forensic science in the United Kingdom without discussing the commercialisation of the forensic marketplace and its impact on the provision of forensic support to the Criminal Justice System. At the end of last year, the British Government announced that it planned to wind up the Forensic Science Service in 2012. This decision has recently been reviewed by Commons Select Committee on Science and Technology I intend to focus on my experience the move to a commercial marketplace has had on the practical aspects of DNA provision in terms of benefits, opportunities, risks and issues to the FSS, the Criminal Justice System and the Police as customers.

There have been opportunities for the development of new services including the review of historical sex offences with new and more sensitive DNA technology, speedy intervention and identification of potential offenders through novel applications of technology. The tendering process has significantly reduced the price of DNA testing and costs to the Police. Turn around times have been significantly reduced from over 50 days to less than 5. The way statements and reports are produced have been more closely aligned to the Criminal Justice Process delivering efficiency improvements and leading to speedier justice.

There are clearly lessons to be learned for countries seeking to improve the deployment and efficiency of DNA provision. And risks to consider.

Genetic testing in the clinic

Christine Patch, Chair of British Society of Human Genetics

Genomics will undoubtedly bring advances to the delivery of medical care. However to date the most significant benefits for patients and families with genetic diseases is to provide information for those at risk to understand the situation in which they find themselves and to make informed decisions based on accurate information derived from a genetic diagnosis. Given the numbers of patients with rare genetic diseases the importance of this should not be underestimated. What patients want are accurate tests provided with appropriate expertise and in a timely manner. In the UK NHS, systems have developed which aim to improve access to validated genetic tests from laboratories working to agreed standards within clinical guidelines and the limits of resources. The perspective from the clinic will be discussed in this presentation.

A Common Framework of Principle for direct-to-consumer genetics testing services (UK Human Genetics Commission)

Professor Frances Flinter, Chair in Clinical Genetics at King's College

These Principles were developed in 2010 by a collaborative working group comprising representatives from the genetic testing industry, experts in regulation, clinical and molecular genetics and genetic counselling, representatives from groups that support individuals with genetic conditions and the UK Department of Health. The need to develop high level Principles for direct-to-consumer genetic tests was first identified during a workshop, convened by the UK Human Genetics Commission in 2009, to discuss the desire for a UK code of practice. Whilst this workshop identified an appetite for specific guidance on good practice, a key outcome was the recognition that the provision of direct-to-consumer genetic testing services took place in an international market that crossed national borders and regulatory jurisdictions. In order to promote consistency the decision was made to initiate a common framework of principles as a high-level document having general applicability across all jurisdictions. The HGC hopes that the Principles will lead to the development of codes of practice that take account of existing regulatory structures and may identify where there is a need for additional regulation or legislation. Suitable systems for monitoring these codes of practice will be required.

The purpose of the Principles is to promote high standards and consistency in the provision of genetic tests amongst commercial providers at an international level in order to safeguard the interests of people seeking genetic testing and their families. The Principles identify areas where individual providers, professional organisations, regulatory bodies, and/or national jurisdictions should have defined measures in place, and the nature of those measures. The Principles are not intended to supersede any national laws and they should be used in accordance with applicable international instruments and domestic law.

Genetic test results have the ability to give rise to a broad spectrum of responses. How an individual responds to the results of a genetic test will depend, sometimes to a great extent, on the personality of that individual and their understanding of the test result and its implications. Therefore, the consequences for an individual of taking a genetic test will vary significantly depending on the individual taking a test, the information provided and the context in which the test is taken. When a genetic test is provided outside a framework of healthcare, special attention must be given as to how that individual may respond to the results of the genetic test and the subsequent impact the test results may have on that individual and their family. With this in mind, these Principles have been developed with the best interests of consumers at the forefront.

The Missing Link – Automated Information and Data Capture technologies to track and trace exhibits from the crime scene to court.

Allan Scott, Managing Director of the Evidence Partnership

In the United Kingdom, the prosecution spends over £500m a year providing forensic evidence to the court and the defence spends just over £350m a year challenging it. In most cases however, the challenges are not to the science but to the processes that were involved, often called the chain of custody and exploit any gaps in possession or security. Whilst the prosecution must prove their case "beyond all reasonable doubt", the defence only need to sow that seed of doubt in the mind of the court.

In the UK, blood and urine samples have been found in food fridges in police stations. No audit has ever been undertaken on the number of DNA sample kits used and those submitted so we don't know how big the problem really is. In fact not only are exhibits failing to get to the laboratory, even when there they get misplaced. In June 2010 a British male was released from prison 27 years after being convicted on forensic evidence. For the last 11 years, the forensic supplier had told the courts the evidence had been destroyed but eventually had to admit that it had been found in an exhibit store they had forgotten they had.

By using AIDC technologies the chances of error are eliminated as technologies exploiting Ultra Violet fluorescent fibres linked to barcodes can make every piece of paper or packaging unique and even tape use to re-seal an exhibit can be identified. This eliminates operator errors and when linked to databases that give warnings when a process has not been followed and prevent further data entry until the problem is resolved.

In business terms this reverses the "operator controlling the process" to the "process controlling the operator" and allows a more efficient police and forensic service to provide the science.

The regulation of genetics tests – a global overview

Stuart Hogarth, Global Biopolitics Research Group, King's College London

This presentation will outline the regulatory frameworks for genetic tests in the US, Europe and Australia; briefly describe the longstanding policy debate about regulation, highlighting the key concerns being raised and identifying the main policy drivers; and explore how regulators are responding to stakeholder concerns.

Personal Genomics and the 'participatory turn' in genetic testing and disease research

Professor Barbara Prainsack, Professor in Sociology and Politics of Bioscience

Discussion about direct-to-consumer (DTC) personal genomics testing on the Internet, which has been available since 2007, has focused primarily on risks to tested individuals and the clinical validity and utility of the test results so far. Similarly, debates on the regulation of DTC personal genomics (and DTC genetic testing more widely) have been fuelled mainly by the same concerns, which rehearse well-known bioethical challenges and which have so far not been supported by solid empirical evidence. Less attention has been paid to another, tangible effect of personal genomics, namely that it has started to change how participation in disease research is conceived and enacted. This presentation will discuss important examples of 'crowdsourcing' genetic and genomic disease research in and around the field of DTC personal genomics, give an overview of potential benefits and inherent challenges, and reflect on the questions which these developments raise for regulation and ethics.