European Division of the IAI
Educational Conference
9\textsuperscript{th} to 11\textsuperscript{th} October 2015
College Court
Leicester, UK

With the major support of DIAMOND sponsor: SmilePass
Hello everyone and welcome to this, our inaugural divisional conference in Leicester. Leicester is a vibrant University town steeped in history going back to Roman times. We are delighted to be holding our conference in such an historic region and it is fitting that we visit a City where only last year, ancient history and modern forensic science came together so spectacularly in unearthing and identifying the remains of King Richard III.

I am delighted to welcome so many sponsors to this event and without their support we could not have put this together. I also want to thank the many speakers who have given up their time to impart their skills and knowledge to us all. It is only through the exchange of information that forensic science and biometrics can thrive.

Finally, I want to thank not just the delegates here this weekend, but also our wider membership, for joining our division and for showing your support for a wider European family of forensic and biometric specialists. I look forward to the future with excitement and anticipation.

Enjoy the conference and I look forward to meeting as many of you as possible.

Aldo Mattei

President

The European Division of International Association for Identification
Who was Richard III and how did he end up in Leicester?

King Richard III was born at the Castle in Fotheringhay on 2 October 1452, the youngest of three brothers. He was given the title Duke of Gloucester when he was nine years old. During his life Richard was a great supporter of his brother, who became King Edward IV, and he helped to defeat a great number of rebellions. In return Richard was given a great number of titles and lands, and married into one of the wealthiest families of the time, the Nevilles. It was with this marriage and acquisition of lands that Richard became a key landholder and influencer across England including Leicestershire, Yorkshire and many parts of Wales.

On 26 June 1483, after his brother’s death Richard was designated as Protector to his nephew King Edward V but instead took the throne himself. He had his two nephews secured in the Tower of London so that they could not be used to spearhead a rebellion against him. He justified this by claiming that his brother’s sons were illegitimate and therefore he was rightful heir to the throne. He was crowned King of England on 6 July.

In the last week of his life, Richard arrived in Leicester on 20 August 1485 to meet with his loyal supporters the Duke of Norfolk and the Earl of Northumberland. He spent the night at the Blue Boar Inn and then set off the next morning to meet the rebellious army of Henry Tudor, largely composed of French mercenaries. King Richard’s route took him by the West Gate and West Bridge and then across Bow Bridge. Richard’s army camped on Ambion Hill overnight and it is believed that in his tent Richard had his own personal Book of Hours (prayer book). A copy of this book was later retrieved and is now kept in the Lambeth Palace library. The Battle of Bosworth Field was joined early the next morning of 22 August. At the high point of the battle King Richard rode valiantly into the middle of
the fighting to confront and attempt to kill Henry Tudor. He came close to succeeding but was unhorsed, surrounded by Henry's supporters and killed.

After the battle Richard's body was brought back into Leicester, arriving by the same route as he had left. Henry Tudor had the body displayed ignominiously for a number of days, and then ordered that it be buried in the nearby Franciscan Abbey (Greyfriars), which stood close by to St Martin's church, now the Cathedral. The burial was carried out in the choir, a private part of the church, and was evidently done hastily and without ceremony but we can be sure would have been with the prayers of the friars. It remained there for the next 527 years, whilst Greyfriars was demolished in the next century, and the site built upon, first as the family home of the Herricks, and later by the Victorians. The remains of King Richard III remained under the ground, where they had been buried, until they were discovered in an archaeological dig in September 2012.

http://leicestercathedral.org/about-us/richard-iii/richard-iii-background-history/
The EU IAI Officers and Board of Directors

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
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<tr>
<td>President</td>
<td>Aldo Mattei</td>
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<td>David Charlton</td>
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<td>Marcel de Puit</td>
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<td>Vice President</td>
<td>Teresa Wu</td>
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Special Thanks to Our Sponsors

Without the valued contribution of our sponsors it would not be possible to put on a conference of such high quality. Their contribution has enabled the Board of Directors to select a quality venue, attract top class speakers and also ensure your conference experience is provided at an affordable cost. With heartfelt thanks to our generous benefactors.

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Delegate Information

Breakfast is served from 7.00am to 9:30am on Weekdays & 7:00am to 10am on weekends.

Check-in time is from 2pm.

Check-out time is 10:00am Monday-Friday.

Check-out time is 11:00am Saturday and Sunday.

Extra toiletries available at Reception

24 hour Reception

130 complimentary secure on-site parking for guests.

Complimentary Wi-Fi around College Court.

Nearest ATM is approximately a 5 minute walk
All Conference Photography and video coverage is brought to you by Bloomfield Digital

http://www.bloomfielddigital.co.uk/

An agile digital marketing company based in the South of England, Sussex, Shoreham-by-sea. We specialise in producing images and video for use in Social Media activities. Our services range from Web Design, Social Media Management, Search Engine Optimisation to Brand Awareness. We cater for all business sizes and are competitive with our affordable prices plans. We can tailor all your Business needs in a plan that suits your business. We can market your business to its full potential.
Welcome!!

Working to coordinate a conference is a bit like running a marathon. There is great sacrifice and effort involved in preparing for the event. There are both good days and bad days in equal measure and often much of the work goes on behind the scenes and goes unnoticed. However, on the day, if the hard work has been done, not only is the conference a success, but also there may be time for those involved in bringing it together to actually enjoy some of it!!

I will let you be the judge of whether you think we have worked hard enough in bringing this event to you. We have tried to seek a venue that is both comfortable and also conducive to learning and networking. The speaker itinerary has been designed to both educate and entertain. It is hoped that many of the talks will set off discussion and debate that will carry on into the bar come the evening!! It is a full weekend but I hope you feel we have brought you a conference that is both topical and relevant.

Bringing this conference together has been a team effort on the part of the Board of Directors. We take our responsibility to you our members very seriously and we value your feedback. We want to improve year on year so please do either seek me out or one of the Board of Directors throughout the weekend if you have suggestions for future events and learning opportunities.

I am stepping down from the Board this year. Over the past 18 months it has been my privilege to work with colleagues to initiate the beginnings of this organisation. I am leaving to reduce my workload, but I intend to stay close to the development of this Division and to making a contribution where I can.

Please enjoy the weekend and I look forward to meeting you all.

Dave Charlton

Chief Operations Officer and Secretary
President’s Dinner (Friday 9\textsuperscript{th} October 2015)

You are invited to the President’s Dinner (Dress Code Lounge Suit or Smart Casual)

Please attend the main foyer and bar area for a sparkling wine reception from 18.30 for dinner at 19.00 where a number of poster presentations will be on display. Please take time to talk with presenters.

Starter

Lemon cured salmon with soy infused cucumber salad and wasabi crème fraiche
Spinach and courgette soup with a ricotta beignet (v)

Main

Braised blade of beef with bubble and squeak shallot jam and seasonal greens
Seasonal vegetable tagine with a smoky red pepper couscous and fennel and tomato salad (v)

Desserts

Lemon posset with strawberry and lemon thyme compote

Alcoholic drinks must be purchased separately.
SmilePass is pleased to be the Diamond Sponsor of the EUIAI’s first inaugural conference and to officially launch our innovative biometric service at this exciting event. Built by a team with over 50 combined years of experience in identity access management, SmilePass offers a ground-breaking, cloud-hosted, multi-modal biometric plug-in toolkit for developers. SmilePass offers these industry leading facial and voice recognition tools to system integrators, small/ start-up businesses, corporations and government organisations that want to offer biometric capabilities, easily into new and existing systems. Working with IBM, SmilePass offers users further commercialisation opportunities to their services with added biometrics capabilities. Unique to SmilePass, users achieve this with no integration or commercial licensing expenses under a pay-per-use model. Users can view demonstrations, download applications, and apply our API to rapidly and cost effectively, build their services. This is done on a no-obligation, free trial basis. As biometrics are increasingly embedded in peoples’ everyday lives, SmilePass will continue to be agile and innovative in its response to their needs and are looking forward to working closely with the EUIAI and its members long into the future.
Conference Plan

Friday

Chaired by Teresa Wu

13.30 Opening Ceremony (President’s Address and Welcome)

14.00 Keynote Speech Dr Gill Tully (UK Forensic Regulator) Fingerprint Quality Standards: Current Status and Future Perspectives


15.00 Refreshments

15.30 Felicity Carlyle - (Knowledge Transfer Network) The Forensic Science Special Interest Group.

16.00 Jeremy Rose (Smilepass ltd) What is the relevance of Locard’s Principle to the investigation of cybercrime?

16.30 Allan Scott Snr (Forensic and Policing Services Association) Working with the Criminal Justice System in an age of Austerity

17.00 – 17.30 Panel Discussion with Ian Gledhill, Felicity Carlyle, Jeremy Rose, Clive Reedman and Allan Scott - Getting noticed, or how to get new ideas to the forensic and biometric marketplace? Chaired by Aldo Mattei and Teresa Wu.

18.30 – 19.00 President’s Drinks Reception and Poster Presentations

19.00 – 00.00 Conference Banquet (Including the Peter James address...provisional speaker is Bob Garrett) and Prize Quiz (Table Teams)
Platinum Sponsors.

Morpho (Safran) is a global leader in identity and security solutions for an increasingly digital and connected world. We employ more than 8,600 people in 55 countries and generated revenues of more than 1.5 billion in 2014. Backed by more than 40 years of experience in biometrics, our unique expertise lies in developing innovative technologies for a wide range of markets and applications for people, governments and business. Morpho contributes to managing identities, protecting borders, detecting threats, supporting law enforcement and providing trusted on-line transactions and services. Our solutions protect identities, ensure safety and safeguard privacy, for easier, everyday lives.

http://www.morpho.com/en

Gold Sponsors.

With a wealth of experience of working in both the private and public sectors, GO4it understand business and how to maximise profits through building relationships, ensuring that projects are professionally managed and by encouraging blue skies thinking. Our specialist area is Biometrics, in which we boast over 30 years of experience in the field. Having supported projects of all sizes, from the very small, to national implementations, we understand fully all aspects of the development, procurement and implementation cycles and are therefore well placed to use this knowledge to the best advantage of our customers. We are delighted to be Gold Sponsors of this exciting event. To find out more about Go4it Consulting please visit the website:

http://www.go4it-consulting.co.uk/
Saturday

Morning Session Chaired by Clive Reedman

08.45 Anko Lubach – (Netherlands Forensic Institute) The use of Probabilistic Evidence in Fingerprint Analysis.

09.30 Prof Jeremy Levesley – (University of Leicester) Mathematical Methods in Fingerprint Analysis.

10.00 Helen Earwaker – (University College London) Fingermark Sufficiency Decision-Making within UK Fingerprint Laboratories

10.30 – 11.00 Morning Refreshments

11.00 Andrew Price and Karen Stringer – East Midlands Special Operations Unit (EMSOU FS) Delivering Joined Up Forensic Services

11.30 Dr Claire Nee – (Portsmouth University) How simulation technology can help us understand burglars’ behaviours at the scene of the crime.


12.30 – 13.30 Lunch

Afternoon Session Chaired by Marcel de Puit

13.30 Simon Cole (Professor of Criminology, Law & Society Ph.D., Cornell University) What has changed over the past two decades or so in latent print analysis?

14.00 Mark Branchflower (Interpol) Increasing the use of INTERPOL AFIS services and developing the new Facial identification Service.

14.30 – 15.00 Dr John Bond – (University of Leicester) Blazing Car Murder..a Mystery from the 1930s.

15.00 – 15.45 Afternoon refreshments

15.45 Dr Carol McCartney – (Northumbria University) Flushing out the Mavericks and Dogmatic. Identification Evidence and Rule 19.

16.15 Joanne Tierney – (Scottish Police Authority) Why are ground truth databases so important?

16.45 Anthony Koertner – (United States Army Criminal Investigations Laboratory (USACIL) - Evolution of fingerprint testimony.

17.15 John Dixon – (West Yorkshire Police) DVI Techniques for obtaining evidence from Cadavers.

18.30 Close of proceedings for day.

19.00 – 22.00 Hot and Cold Finger Buffet with Late Night Bar.
Gold Sponsors

Ron Smith & Associates, Inc. is honored to be an official Gold Sponsor of the European Division of the IAI’s Inaugural Conference. RS&A is woven deeply into the family of Divisions within the IAI and we are proud to be in Leicester for this momentous occasion.

Ron Smith & Associates, Inc. is the largest private industry provider of forensic identification services in the United States. RS&A has two ISO 17025 and 17020 accredited laboratory facilities located in Mississippi and in Florida. In 2015, RS&A also gained ISO 17043 accreditation as an approved Proficiency Test Provider in both Latent Prints and Ten Prints and in 2016 will be expanding that scope to include Footwear, Tire Track and Latent Print Processing. Our products include international forensic identification Training, Case Consulting, ISO Mentoring, Quality Management, and Pattern Evidence Competency/Proficiency Testing Services. Visit us at www.ronsmithandassociates.com for more information.

Sopra Steria is one of Europe’s leading international management and IT consulting firms with 37,000 employees in 20 countries. The company portfolio offers end-to-end solutions for ID management and biometric identification, including biometric capture and encoding & matching with SteriaAFIS, SteriaFITPlus and SteriaFIT Mobile.

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Sunday

08.15 – 0845 Business Meeting: Ask the Board (a meeting for members to discuss the future of the division with Board and vote on key decisions)

Session Chaired by Dave Charlton

09.00 Francisco Goncalves/Silke Jensen (Intrepid Research Project – Leicester University) Perceptual and decision-making processes underlying fingerprint examination.

09.30 Professor Chang-Tsun Li – (University of Warwick) People Identification.


10.30 – 10.45 Refreshments

10.45 John Goldey (HORIBA/SPEX Forensics) – Latest Developments in Forensic Imaging.

11.15 Martin Drahansky – (Head of the research group STRaDe @ Brno University of Technology, Czech Republic) Research topics in biometrics.

11.45 Dr Sarah Fieldhouse (Staffordshire University) - The design and implementation of a proficiency test for assessors of finger mark quality.

12.15 Roberto Wolfer (Jenetric) - Image quality for fingerprint and palm scanners.

12.45 Closing Remarks (President)

13.00 Lunch and Depart
Speakers Biographies and Abstracts:

**Allan Scott**

Allan was a forensic investigator in several police services across the UK for over 25 years. His final role in Merseyside was that of Forensic Quality Assurance Manager. Since his retirement, he has been a consultant and part-time lecturer at the University of Central Lancashire, School of Forensic and Investigative Sciences. His areas of expertise are crime scene investigation, crime scene management, and evidence management. In 2013, he along with four other SMEs, he founded the Forensic and Policing Services Association (FAPSA Ltd), a not-for-profit association that supports SMEs in both fields.

**Working with the Criminal Justice System in an age of Austerity**

Austerity in public bodies is nothing new and working within budgets can be difficult but it is not the real problem. “Silo thinking” and procurement departments’ overly cautious conditions on tenders stifles innovation and becomes anti-competitive, costing the taxpayer more and delivering poorer services.

Mixed messages from politicians and fear of possible error add to the mix.

The Forensic and Policing Services Association (FAPSA) represents some 50 plus SMEs and works to promote quality standards and the adoption of cost-effective services and technologies to try and ensure a level playing field.

**Ron Smith**

Ron Smith began his career with the Federal Bureau of Investigation in 1972, moving on to the Alabama Bureau of Investigation and from 1978 to 2002 with the Mississippi Crime Laboratory, retiring as Associate Director. He has over forty years of experience in latent print, crime scene and laboratory management practices and has been certified by the I.A.I. as a latent print examiner since 1978. In July of 2001, he was awarded the “John A. Dondero Memorial Award”, which is the highest award bestowed by the International Association for Identification for exemplary contributions to the science of forensic identification. Ron has lectured on multiple forensic topics across the United States and numerous other countries around the world.

Ron Smith & Associates has conducted years of research on testing for pattern evidence examiners and has become the industry leader in the development of high quality competency and proficiency testing for pattern evidence examiners.
Jon Goldey

Jon is experienced with forensic equipment and technology related to Forensic Light Sources, Reflective Ultra Violet Imaging Systems, Automated Finger/Palm Print Systems, Digital Enhancement and Photography.

He has helped design, test and evaluate new prototypes for the Forensic market, and worked on developing new techniques and applications for Forensic Light Sources.

Jon’s responsible for export sales for the division and managing the various representatives. He currently has traveled to 4 of the 7 Continents where, besides making sales visits and product demonstrations, he has been a guest lecturer at various conferences and conducted numerous workshops covering Forensic Lights and Biometrics.

Jon has created both training and marketing videos, related to the products sold by the division. This work includes creating content, capturing both video and still images, post production and voice over when necessary. He has also written and edited technical manuals for the products.

Jon likes to keep busy and supports several charities and causes by competing in their various events. He has completed several triathlon and running races of various distances, including 6 Marathons and he is an IRONMAN Triathlete.

Anko Lubach

Abstract

The Probabilistic Interpretation of Fingerprint Evidence. I will start by giving an overview of the use of the probabilistic interpretation in casework by the Netherlands Forensic Institute. Then the use of a verbal scale combined with a statistical value of the evidential value based on pattern and minutiae arrangements will be addressed. Furthermore attention will be given to the pro's and con's of probabilistic reporting in The Netherlands, the criticism and discussion following the introduction of logical correct conclusions in fingerprint evidence and differences in reporting between NFI and the Dutch police which still applies the historical Dutch numerical standard.

Anthony Koertner

Is the Research Coordinator for the Latent Print Branch at the Defense Forensic Science Center (DFSC), Forest Park, GA, United States. Anthony has worked as a latent print examiner for over 8 years. Anthony graduated with a B.S. in Forensic Science from the University of Central Florida in Orlando, FL. He began his career as a technician with the Florida Department of Law Enforcement. Soon after he began working for the DFSC he obtained his IAI Certifications for Latent Print Examination and Latent Footwear Examination. Recently, Anthony was granted a scholarship from the Science, Mathematics and Research for Transformation (SMART) Program where he will be obtaining his Masters of Science Degree from the University of Florida.
Topic for Presentation: Evolution of fingerprint testimony, to include potential issues with current report wording used in the field (single source attribution, such as "identification" or "individualization") and the presentation of an alternative method of reporting that would be scientifically defensible, while not overstating or understating the fingerprint evidence.

Dr Carole McCartney

Dr Carole McCartney is a Reader in the School of Law, Northumbria University. Previously senior lecturer in criminal law and criminal justice at the University of Leeds, and Bond University, Queensland, Australia. Carole has written on Australian justice, Innocence Projects, miscarriages of justice, international policing cooperation, and DNA, forensic science and criminal justice more widely. She established an Innocence Project at the University of Leeds in 2005, and was project manager for the Nuffield Council on Bioethics report ‘The Forensic Uses of Bio-information: Ethical Issues’ and the Nuffield Foundation project ‘The Future of Forensic Bioinformation’. She has run projects on forensic science education and forensic regulation and completed an EU Marie Curie international research fellowship (2009-2012) on ‘Forensic Identification Frontiers’. She currently teaches and researches in the areas of criminal law, criminal evidence, and forensic science.

“Flushing out the Mavericks and Dogmatic”:

Identification Evidence and Rule 19.

The Criminal Procedure Rules 2014 contained new provisions for the testing of expert evidence before admission at trial. The tests included in Rule 19 (previously Rule 33A) are intended to implement changes that were called for by the Law Commission after their extensive work on expert evidence in the justice system. More recently the subject of a Criminal Practice Direction, as well as strongly worded exhortations from the highest judicial offices, the expectation is that with training now being rolled out nationally for advocates, Rule 19 should lead to far more stringent scrutiny of expert evidence prior to, and at trial. As the Law Commissioner has stated – the Rule is there to ‘flush out the mavericks and dogmatic’. This paper will look at the new Rule 19 and considers the impact the Rule and its strict application may have on identification experts and their evidence.

Chang-Tsun Li

Chang-Tsun Li received the BEng degree in electrical engineering from National Defence University (NDU), Taiwan, in 1987, the MSc degree in computer science from U.S. Naval Postgraduate School, USA, in 1992, and the PhD degree in computer science from the University of Warwick, UK, in 1998. He was an associate professor of the Department of Electrical Engineering at NDU during 1998-2002 and a visiting professor of the Department of Computer Science at U.S. Naval Postgraduate School in the second half of 2001. He is currently a professor of the Department of Computer Science at the University of Warwick, UK. His research interests include biometrics, multimedia forensics and security, computer vision, image processing, pattern recognition, machine learning and content-based image retrieval. He was Editor-in-Chief of the International Journal of Digital Crime and Forensics (2009 - 2013) and is currently Associate
Editor of the EURASIP Journal of Image and Video Processing (JIVP), Associate Editor-in-Chief of International Journal of Biometrics and Bioinformatics (IJBB) and Associate of Editor of Human-centric Computing and Information Sciences (HCIS). He has involved in the organisation of a number of international conferences and workshops and also served as member of the international program committees for several international conferences. He was the coordinator of the international joint project entitled Digital Image and Video Forensics (DIVEFOR) funded through the Marie Curie Action under the EU’s Seventh Framework Programme (FP7) from June 2010 to May 2014. Led by Professor Chang-Tsun Li, a consortium consisting of 16 institutions from 12 countries has successfully secured another EU Horizon 2020 grant for implementing an EU-funded project, entitled Computer Vision Enabled Multimedia Forensics and People Identification (acronym: IDENTITY), for four years from January 2016.

**Abstract:** Given the acute need for automatic people identification in various security applications, biometrics has been an active research area for two decades. However, while people identification is spontaneous and intuitive function the human brain performs when people meet or see pictures of human faces, automatic people identification is by no means a trivial task for computers. Starting from simpler tasks of which the subjects are required to cooperate with the system, we have seen applications, such as frontal face recognition for border control and iris recognition for access management, being deployed. With the biometrics becoming more mature, attempts are being made to tackle the more challenging identification tasks of which the subjects are not cooperating with the systems and the imaging conditions are not controllable. This talk is intended to cover people identification at a distance as this plays an important role in crime prevention, law enforcement, security, search for missing persons (e.g., missing children or people with dementia), etc.

**Dr Claire Nee**
International Centre for Research in Forensic Psychology
University of Portsmouth

Claire Nee has over 30 years experience of conducting research with offenders. She is the leading UK research on residential burglary. She is Director of ICRFP at Portsmouth University: the largest and longest established research group of its kind in the UK. Prior to this she worked as a policy researcher at the Home Office in the UK. Her research interests focus on the offender’s perspective of their crimes, and particularly their decision-making and behaviour at the scene of the crime. She has published widely on this subject and presented her research to both academics and practitioners around the world.

‘How simulation technology can help us understand burglars’ behaviours at the scene of the crime’

In this talk I will outline what we have learnt about burglars’ behaviour and decision-making regarding target choice and the commission of the crime, using a variety of methodologies over time. I will then present results of new studies we are undertaking using simulation technology which are allowing us to observe offenders as they undertake simulated crimes. I will discuss how the use of this technology is likely to considerably improve our understanding of crime scene behaviour, which has implications for both reducing opportunities for crime in the environment and for improving the rehabilitation of offenders.
Felicity Carlysle

Felicity Carlysle completed a BSc in Biochemistry at Royal Holloway, University of London and then moved to Scotland for a Masters in Forensic Science at the University of Strathclyde. She went on to complete her PhD in Forensic Chemistry at the same university under the supervision of Prof. Niamh Nic Daeid. She began working for the Forensic Science Special Interest Group as an intern while finishing her PhD and became a full time member of the Knowledge Transfer Network in 2014 where she splits her time between the SIG and the Sensors Systems community, where her focus is on instrumentation.

Abstract: The Forensic Science Special Interest Group (SIG) was created following Bernard Silverman’s review of forensic science R&D, with a remit to help stimulate forensic science innovation within the UK. This presentation will aim to provide further information on the background of the SIG. It will also cover the various activities the SIG undertakes across the forensic sector and provide information on how organisations and individuals can benefit from the work of the group.

Dr Gillian Tully

Gillian spent over 20 years at the Forensic Science Service, specialising initially in DNA innovation, and later leading the entire R&D team. She reported many mitochondrial DNA cases in court, as well as giving evidence in high profile cases where the validity of scientific methods was at issue.

In 2012, Gill became a founding member of Principal Forensic Services, and consulted in the UK and abroad, primarily in relation to forensic science innovation and quality.

Since November 2014, she has been the Forensic Science Regulator, responsible for setting quality standards in UK forensic science.

Fingerprint Quality Standards: Current Status and Future Perspectives

By November 2015, all fingerprint enhancement laboratories will be expected to be accredited to the ISO/IEC 17025 standard. The vast majority have already achieved their accreditation for at least some techniques.

A fingerprint comparison standard was launched as an Appendix to the Forensic Science Regulator’s Codes of Practice and Conduct in March 2015, with the deadline for compliance (and accreditation to ISO/IEC 17025) being October 2018. The first laboratory has now been assessed against the ISO standard and recommended for accreditation.

Accreditation is, however, only the independent assessment of compliance against the standards: it is not an end in itself. This means not creating a document or process because it gives a “tick in the box” for
accréditation, but thinking about what is required and why. It means taking part in challenging proficiency
tests to bench-mark against others and continually improve performance. It means always getting better.

**Helen Earwaker**

Helen Earwaker is a PhD researcher within the Doctoral Training Centre of the Department of Security and
Crime Science at University College London. Her current multidisciplinary research at UCL focusses upon
aspects of decision-making within fingerprint laboratories. Prior to joining UCL Helen worked as a
fingerprint laboratory practitioner for Northumbria Police, which led to her motivation to carry out
research in this area. Helen has also completed a six month internship with the Forensic Science Special
Interest Group which involved collaboration with a number of key stakeholders within the fingerprint
domain.

Fingermark Sufficiency Decision-Making within UK Fingerprint Laboratories

**Abstract**

Fingerprint laboratory practitioners carry out the vital role of filtering fingerprint evidence. Having
enhanced fingermarks on items of evidence, practitioners must often determine which pieces of developed
ridge detail are of sufficient quality to be of evidential value to a fingerprint examiner. Submitting ridge
detail of insufficient quality can, potentially, result in wasted resources, whilst discarding ridge detail that is
of sufficient quality can lead to a loss of potential evidence.

This research examines the effectiveness of the sufficiency decision-making process. Studies were carried
out within two UK police forces to experimentally determine the efficiency of laboratory practitioner
submission decisions in the case of challenging fingermarks. Results suggest that sufficiency determination
by laboratory practitioners does not always match the usability determination of fingerprint examiners,
and that there are differences in sufficiency determination between laboratories. These results are
presented in the wider context of organisational structure, procedure, and quality assurance processes.

**Ian Gledhill**

Experience within the forensics arena for over 32 years including Head of the regional Identification Bureau
for the East Midlands. Worked with AFIS companies testing, benchmarking and training internationally.

Been at the for front of innovation, developing the first transmission of crime scene marks to bureaux in
2004 which is now used by 90% of the UK forces and was instrumental in the setting up of the first truly
regional collaboration of 5 forces forensic services in the East Midlands as well as developing paperless
office and lights out processing for the UK in 2012.

Carried out process reviews for many forces and recently responsible for instigating digital data bases of
fingerprint collections and developing digital processing to increase bureau efficiencies.

In Feb 2015 became a consultant in biometrics, IG Biometrics Consultancy Ltd and become a director of KPI
Forensics Ltd offering forensic process and technology consultancy, training and forensic service delivery to
the UK and overseas.

**Abstract**

"ISO 17025 Accreditation.....The Challenges"
The requirements of the Forensic Regulator are that all Identification Bureaux need to be accredited to ISO 17025 by 2018, for a number of years in the UK forces have been moving towards accreditation but progress is slow due to a number of factors around associated costs in austere times, issues around the correct staffing and knowledge base to implementation, staff time constraints around obtaining accreditation and maintaining over subsequent years as business as usual. The Codes of Practice and Conduct have been published to assist forces but areas around external involvement around competency, proficiency and innovative solutions still need to be explored.

Mark Branchflower

Mr Branchflower joined New Scotland Yard fingerprint branch in England in 1984 as a trainee fingerprint officer. After qualifying as a fingerprint expert in 1989 he left the UK and in 1990 became a fingerprint officer with INTERPOL at its headquarters in Lyon France. Since 1990 he has participated in many INTERPOL European and International working groups on fingerprint standards, AFIS, training, disaster victim Identification and DNA. Currently as Head of the Fingerprint Unit his main duties are the organisation of INTERPOL fingerprint AFIS services, organisation of meetings and conferences and Identification projects. Currently Mr Branchflower is involved in several projects concerning the exchange of fingerprint information between Interpol member countries, increasing the use of INTERPOL AFIS services and developing the new Facial identification service. This year Mark will celebrate 25 years’ service with INTERPOL.

Martin Drahansky

Dr. Martin Drahansky is associate professor at the Brno University of Technology, Faculty of Information Technology (Czech Republic). He received his MSc. degree at the Faculty of Electrotechnics and Computer Science, Brno University of Technology (Czech Republic) in 2001 and in the same time at the Faculty of Electrotechnics, FernUniversität in Hagen (Germany), his Ph.D. degree at the Faculty of Information Technology, Brno University of Technology (Czech Republic) in 2005 and did his habilitation at the same faculty in 2009. He is teaching in the field of biometrics and sensorics, and is head of the research group STRaDe. His research interests include biometric systems, security in IT and sensor systems. You can find more here: http://www.fit.vutbr.cz/~drahan.

Abstract

The presentation summarizes the selected research and development results in biometrics of the research group STRaDe at the Faculty of Information Technology, Brno University of Technology (Czech Republic). Many of these topics might be probably of interest for criminal police praxis. The topics are concretely: 3D fingerprinting, experiments with optic skin properties on fingers, liveness detection on fingers, fingerprint spoofing, finger veins, 3D face (including u-ramp acquirement and mapping and normalization to 2D), thermo-face (including u-ramp acquirement), 3D hand geometry, eye iris and retina recognition and analysis of chips in biometric passports.
Roberto Wolfer

Roberto Wolfer is co-founder and CEO of JENETRIC. He has several years experiences in biometrics particularly in fingerprint and palm print scanners as well as document readers. Before founding JENETRIC he was responsible for the biometric capture product line at Crossmatch. Mr. Wolfer has an engineering degree in Biomedical Engineering, a post-graduate degree in Intellectual Property rights and more than 15 years experiences in product management in medical diagnostic and biometric industry.

Abstract:

Fingerprint image quality not only depends on the device itself but also to a high degree on the user. Users need instant quality feedback and guidance for avoiding capture mistakes and achieving highest image quality independent from environmental conditions. The speaker will introduce latest fingerprint technologies and standards developments towards consistent fingerprint image quality combined with increased user experiences.

Dr Sarah Fieldhouse

Dr Sarah Fieldhouse is a lecturer and researcher in Forensic Science at Staffordshire University. Her research interests include fingermark research methodologies; such as standardising fingermark deposition using fingerprint samplers, and consistency in the assessment of fingermark quality using proficiency tests. Sarah is extremely interested in fingermark development methodologies, which include portable cyanoacrylate fuming systems, and the use of lanthanide compounds as fingermark development agents. She currently supervises PhD research into Iron Oxide Wet Powder Suspension interaction with latent fingermarks, and the optimisation of powder formulations for fingermark development and subsequent analysis using SALDI-MS.

The design and implementation of a proficiency test for assessors of fingermark quality

Drs Sarah Fieldhouse and Claire Gwinnett, Staffordshire University, UK.

A variety of objective and subjective approaches are currently used to assess the quality of fingermarks produced during research projects. It is particularly important to consider user competence and/or consistency in assessment with subjective approaches given that projects often include several thousand marks. Intra-institution controls are likely to help manage variations between researchers from the same institution and/or project(s), but are unlikely to manage differences between projects, particularly if different approaches are used. Establishing consistency in the approach to quality assessment could
encourage collaboration, given that data from multiple projects may be combined or compared. In order for effective collaboration, competency of using such approaches should be identified to ensure parity. Proficiency testing (PT) is a popular means of comparing and monitoring the competency of individuals, whilst also assessing the validity of data and conclusions. This project has developed a proficiency testing scheme for the assessment of fingermark quality for researchers using a specific grading system. A large collection of test samples were created controlling variables such as force, fingermark composition and surface type. An ‘inter-laboratory testing scheme’ design was used for the proficiency test and established fingerprint researchers participated in the project to produce known values for the 6 chosen test samples for round one of the testing scheme, described in this paper. Second year BSc (Hons) Forensic Science and Forensic Investigation student participants from Staffordshire University completed the proficiency test as part of a fingermark practical. The results indicated that generally the student participants involved in this project were not able to demonstrate a satisfactory level of proficiency of fingermark quality assessment using this grading system which was attributed to their relative experience in assessing the quality of fingermarks compared to ‘experts’ in fingermark analysis. The results therefore highlighted considerations for future grading systems, and additional training requirements of users. Future changes to the training approach could increase user knowledge and proficiency levels to the extent that such individuals or other, more experienced fingermark researchers may effectively contribute to wider collaborative projects.

Jeremy Levesley
Jeremy is a professor of applied mathematics with an interest in the use of mathematics for improving decision making in forensics. He has been at the University of Leicester for the past 25 years, and is now supervising a PhD project in the Intrepid network on fingerprint analysis.

Mathematical Methods in Fingerprint Analysis
This talk will be about the uses of mathematical methods in fingerprint analysis, and will attempt to give an intuitive feel for the uses of the methods, rather than get into technical details. I will discuss Fourier series, wavelets, neural networks, clustering techniques. A key message will be that the mathematician needs to work closely with the forensic expert in order to maximise the value of the data techniques.

Silke Jensen
Silke Jensen is a Marie Curie Early Stage Researcher within the University of Leicester’s INTREPID Forensics programme. Her current research focuses on the visual search strategies used by fingerprint experts during the Analysis and Comparison stages of the ACE-V process. She completed her Bachelor’s and Master’s in Psychology at the University of Aberdeen, where she worked as a part-time research assistant alongside her studies. Her research interests include visual pattern recognition, visual search, cueing paradigms, residual visual abilities in hemianopia, and biological motion perception.

Francisco Valente Gonçalves
Francisco Valente Gonçalves is a Marie Curie Early Stage Researcher focusing on Human Factors in Forensic Sciences. His research will be held on the verification phase of the ACE-V process. He undertook his BSc in Psychological Sciences between Portugal (ISPA-IU) and Spain (Universitat de Valencia), having worked as an undergraduate researcher during this degree. With a MSc in Psychocriminology he worked at the National Institute of Legal Medicine and Forensic Sciences. Before starting his PhD at the University of Leicester’s
INTREPID Forensics programme he worked as a clinical and forensic psychologist in different risk contexts such as hospitals, schools and prisons.

Abstract

Over the past decade there has been an increased focus on human factors in the forensic community, due to the discovery of flaws in procedures that led to miscarriages of justice. Understanding the perceptual and decision-making processes underlying fingerprint examination can improve examination guidelines, recruitment, training and impact error mitigation as well as support expert witnesses in court. This paper is going to introduce planned research into (1) Fingerprint examiners’ ability to extract relevant information from fingerprints [during analysis and comparison], and (2) the impact of contextual information on forensic practitioner’s performance during the verification phase of ACE-V process.

Simon A Cole

Simon A. Cole is Professor of Criminology, Law and Society and Director of the Newkirk Center for Science & Society at the University of California, Irvine. He received his Ph.D. in Science & Technology Studies from Cornell University. Dr. Cole is the author of Suspect Identities: A History of Fingerprinting and Criminal Identification (Harvard University Press, 2001), which was awarded the 2003 Rachel Carson Prize by the Society for Social Studies of Science, and Truth Machine: The Contentious History of DNA Fingerprinting (University of Chicago Press, 2008, with Michael Lynch, Ruth McNally & Kathleen Jordan). He is a member of the Human Factors Subcommittee of the National Commission on Forensic Science and the Forensic Culture Task Force for the National Institute of Standards and Technology, and he is Co-Editor of the journal Theoretical Criminology.

Latent Print Analysis in the United States: Past, Present, Future

This presentation will reflect on what has changed over the past two decades or so in latent print analysis, with an emphasis on the United States, from the perspective of a historian of the discipline. It will treat the publication of the 2009 National Research Council report as a watershed moment, and the creation of the National Commission on Forensic Science (NCFS) and National Institute of Standards and Technology Forensics Organization of Scientific Area Committees (OSACs) as potential, but only potential, harbingers of new era in forensic disciplines, such as latent print analysis. The presentation will focus on how debates have changed over the past two decades and what the debates are likely to be over in the next two decades. It will assess the work of the NCFS and OSACs thus far, and it will attempt to predict what issues will likely be important in the future. In so doing, it will explore whether and how latent print analysis might look different in the near future.
**Professor Ivan Birch**  
Consultant Expert Witness, Sheffield Teaching Hospitals NHS Foundation Trust

Professor Ivan Birch is Consultant Expert Witness in forensic gait analysis with Sheffield Teaching Hospitals NHS Foundation Trust. Ivan graduated in 1978 with a BSc Joint Honours in Science from the University of Salford, gained an MSc in Human Biology from the University of Loughborough in 1980, and was awarded a PhD in Biomechanics by the University of Brighton in 2007. He has extensive experience of teaching biomechanics, anatomy, physiology and research methods, and is a Professional Member of the Forensic Science Society, and Emeritus Professor of Human Sciences. He is included on the National Crime Agency Specialist Operations Centre Expert Witness Advisers Database in the UK, and has more than 30 years’ experience of gait analysis.

**Forensic Gait Analysis: how and why**

Forensic gait analysis is now widely used as a contributor to the identification of the perpetrators of crime, based on the subjective recognition of features and combinations of features of gait. These class level features occur in varying proportions of the population, the particular combination of features seen in a subject adding to their discriminatory potential in aiding the process of identification. Despite now having been presented in court for 15 years, the discipline is still young, and further work needs to be undertaken to consolidate the evidence base for many areas of practice. The presentation will consider the development of forensic gait analysis and its acceptance as a forensic science discipline, what it can contribute to the process of identification, and the potential for its development as an objective methodology.

**Joanne Tierney**

Joanne Tierney has been the lead Forensic Scientists for fingerprints at the Scottish Police Services Authority since 2011. Influential in the way fingerprint best practice has developed in the SPA, Joanne has led a process of change within her organisation to a state of the art organisation that has quality standards at the heart of their process. Nearing completed ISO17025 accreditation the SPA has built experience in dealing with the challenges of achieving ISO standard practices.

Abstract:

So you need a ground truth fingerprint database. Firstly, why is it necessary and how difficult is it to build? I will explain how the SPA went about this task and will discuss what we did to compile the material. I will also discuss any lessons learned and offer insight into how other agencies can build upon our experiences.

**Dr John W Bond OBE**
John read Applied Physics at the University of Bath and researched Space Plasma Physics at the University of Sussex. He joined Northamptonshire Police in 1993 to head the force’s Forensic Science Department. In 2011, John took early retirement from Northamptonshire Police and is now a Senior Lecturer in Forensic Sciences at the University of Leicester. In recent years, John has published over sixty research papers and has taken out several patents related to new ways of visualizing fingerprint deposits on difficult surfaces. In 2011 John was awarded an OBE by the Queen for services to Forensic science.

The Blazing Car Murder

In the early hours of 6th November 1930, the charred body of a male was discovered in a burning car near Hardingstone, Northamptonshire. Following a police investigation, the car’s owner, Alfred Rouse, was convicted of murder. Over the years, despite many rumours as to the identity of the victim, this was never discovered. In 2012, circumstantial evidence led the family of William Briggs to believe that he could be the victim. This talk tells the story of how researchers at the Universities of Leicester and Northumbria were able, after over eighty years, to provide some closure to the Briggs family.
**JOHN DIXON**

Hello, I am a Fingerprint/Identification Expert working for the Yorkshire and The Humber Scientific Support Unit. I have been doing this crazy job now for 26 years with 18 years in the Major Crime Team.

I specialise in friction ridge detail recovery from badly damaged and decomposed bodies and also work as part of the National DVI (Disaster Victim Identification) Team. I have published my work and train CSI and Fingerprint staff in the fine art of body friction ridge detail recovery and identification.

I have done many PowerPoint presentations on this subject and certainly like to keep it interesting and I do encourage audience participation so beware!

**Abstract**

This presentation will give an explicit look at what can be done in cases of extreme damage and decomposition regarding friction ridge recovery from bodies. I pack a lot of pictures and topics in a very pacey presentation which will show lots of pictures of decomposed bodies so be warned in case you fancy sausages for breakfast!

I will also be looking at such things as same-day identification, anti-mortem farming and why this is all linked into respect for the dead which is very important in my opinion.

I will also be showing the main body decomposition types and study cases illustrating procedures and results. You will hear the words “Quality” and “Clean-Up” on a regular basis to the point of it being a mantra. I do a full Q & A afterwards so bring drinks and snacks.

**Jeremy Rose**


My first experience of biometrics was in 1992 when I was asked by a security conscious customer to integrate a more positive method of identifying people by using a biometric characteristic. Although some biometric technologies existed there was a minefield of good and bad but my specialty in developing IT systems and sitting between the programmers and the users gave me a unique skill in interfacing between technology and real life applications quickly able to identify good useable technology and eliminate those biometrics purported to be good. Since then, I have developed ruggedised biometric applications for fast throughput of people in demanding situations such as national projects, airports and prisons and have since developed the world’s first fingerprint only remote access control system – a feat which the so called experts said could not be done. In February 206, I sold my business to The Croma Group, an AIM listed Plc so that I could further some of my other activities and interests. However, with the knowledge, skills and experience I have gained, I have now returned to my main area of interest relating to this expanding field.

**Biometrics?**

What is the relevance of Locard's Principle to the investigation of cybercrime?

Jeremy will discuss the relationship between the physical and digital aspects of forensic crime scene examinations. Does it hold in the digital world that ‘every contact leaves a trace’? Can we approach digital crime as though we are dealing with physical evidence? If not, what do we need to understand and how do we re-focus our investigatory mindset? Or can we still apply Locard in the digital space?
The world of biometrics can be quite daunting to the person or organisation that has never previously come across this technology. What does it mean? Why is everyone about it? What can it do for me? Like anything, once explained and demonstrated the walls start breaking down and it becomes clear how biometrics are going to become part of our everyday lives. But this is only the beginning and by opening up the proverbial door, will lead you to many routes such as different biometric technologies—all of which can lead to confusion again. My job is to explain to you how it all works, to give you a clear understanding and to inform you how you can benefit from biometric technology and how it could become a problem if you do not become involved with it. Remember the days before mobile telephones, fax machines and email? Biometrics is revolutionising the way we deal with problems today and will be as commonplace as all these items. Ignoring biometrics is turning your back on health, safety, security issues and your future.

Kate Jones

Kate Jones recently started her PhD in Forensic Science at Staffordshire University, having gained a Bachelor’s Degree with first class honours at the same institute. She lectures on a part-time basis within the Faculty of Computing, Engineering and Sciences after being awarded a Partial Scholarship by the University, which involves studying for her Postgraduate Certificate in Higher and Professional Education alongside her PhD. Kate has experience in crime scene examination after working with CSI Manager Tony Coombes at Derbyshire Police Constabulary, with whom she is currently in collaboration, along with Newcastle-upon-Tyne based company ArroGen. It is hoped that her PhD research will lead to postdoctoral projects with her collaborators and that she may gain full-time status as a lecturer in her field.

Abstract

Optimisation of Dry Powder Formulations for Fingermark Enhancement and its Application for Analysis by Surface Assisted Laser Desorption Ionisation Mass Spectrometry (SALDI-MS)

Current methods for developing latent fingermarks on surfaces for crime scene investigation include dusting with powders to visualise the location of the mark. Such powders are designed to stick to the main constituents of fingermarks and are currently less effective for blood, urine, saliva and semen residues. Another major concern is that using animal-hair brushes for dusting inevitably involves the brush making contact with the mark’s surface which will result in uptake onto the brush which can lead to transfer of such contaminants across marks. This has been described for DNA cross-contamination and the cross-contamination of drug contact residues has been observed. A third limitation stems from the non-selective nature of the dusting process as powder is applied over entire surfaces. This results in only a minute fraction of the applied powder sticking to any marks with the remainder causing gross contamination of the scene.

A powder to be used in novel contact-free approaches has been developed and is currently being evaluated for optimisation. Once optimised, the aim is to produce a simple and portable device that will visually locate a variety of biological residues, apply the optimised powder to produce developed fingermarks of excellent definition and enable additional analysis of the resulting marks to be undertaken using SALDI-MS, offering additional information to identify the mark’s donor, e.g., contact residues (explosives, drugs of abuse etc.), biomarkers and metabolites, hence improving detection rates. It is non-destructive and as it is a non-contact technology, cross-contamination is eliminated.
Poster Presentations

Francesca Stubbs – Staffordshire University

Title

An investigation into the interaction between Iron Oxide Wet Powder Suspension and individual constituents found in eccrine sweat.

Abstract

Iron oxide wet powder suspension (WPS) is used to develop latent fingermarks found on a range of semi-porous and non-porous surfaces. Despite its effectiveness the interaction taking place between the iron oxide WPS and fingermark residue is unknown.

Previous studies on participant fingermarks show a significant inter and intra person variation in the quality of developed fingermarks when using iron oxide WPS. Additionally research on isolated constituents found in eccrine sweat has shown that the WPS has a preference in adhering to alanine, serine and sodium fluoride over glucose, sodium chloride, urea and lactic acid.

This study focused on furthering the investigation in to the iron oxide WPS selective deposition on isolated constituents found in eccrine residue; particularly testing a variety of non-porous substrates, different dilutions of solution and alternative fixing methods (to mimic sebaceous residue). The results for this will be disseminated during the presentation.