6th Conference of the European Division of the International Association for Identification
19th – 21st June 2023
Lisbon, Portugal

Hosted by and co-organised with

Policia Judiciária, Lisbon, Portugal

Welcome to our 6th conference

Welcome to Lisbon and to the 6th conference for the European Division of the International Association for Identification.

The Board of Directors have worked hard to ensure that this conference will be engaging and stimulating event for you all.

Our responsibility is to our members, and we have organised a conference with a variety of high calibre speakers who are the best researchers and practitioners in their fields. We hope that you learn from and enjoy the presentations and we look forward to feedback from you all.

As a European organisation we want to ensure that we provide an opportunity for members from many countries to attend a first-class training experience, to meet others from across the continent and share experiences and practice.

The final thank you is to our sponsors who have made this conference possible. Please make sure that you all visit their stands during breaks.

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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 ensure your conference experience is provided at an affordable cost. With heartfelt thanks to our generous benefactors.

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Our biometrics and identity solutions enable government agencies to solve crimes more efficiently, prevent fraud, secure national borders, or protect identities for various other applications.
We have more than 300 biometric deployments in 80 countries, leveraging strong biometric authentication and identification worldwide for customers at all government levels.
With more than 30 years of biometric technology expertise, Thales offers a comprehensive suite of technology products and services, helping governments and agencies worldwide keep the public safe and secure.

About us – As the leader in identity technologies, IDEMIA is on a mission to unlock the world and make it safer. Backed by cutting-edge R&D, IDEMIA provides unique technologies, underpinned by long-standing expertise in biometrics, cryptography, data analytics, systems and smart devices.
IDEMIA offers its public and private customers payment, connectivity, access control, travel, identity and public security solutions. Every day, around the world, IDEMIA secures billions of interactions in the physical and digital worlds.
With nearly 15,000 employees, IDEMIA is trusted by over 600 governmental organizations and more than 2,300 enterprises spread over 180 countries, with an impactful, ethical, and socially responsible approach.
For more information, visit www.idemia.com and follow @IDEMIAGroup on Twitter.

BRONZE SPONSOR

MELCO is a Portuguese company, partner of world leading manufacturers of forensic science equipment and products, to provide forensic experts with the most innovative and reliable technologies available in the market, in different areas of expertise such as fingerprints, crime scene investigation, questioned document examination and trace evidence analysis.

CONFERENCE PARTNERS

We would like to pass on our thanks and appreciation to our conference partners.

The Policia Judiciária in Lisbon are our hosts and have been an integral part of the organisation of this event. Without their help and support we would not have been able to organise this event for you.

We would also like to thank the parent body IAI for their financial support to us for this event.

6th Conference of the European Division of the International Association for Identification

Held at Policia Judiciária, Lisbon, Portugal
19th -21st June 2023.

Masterclass sessions for Monday 19th June

0830	**Registration begins**
0900 - 1030	AFIS/ABIS Masterclass **John Riemen** **Caroline Gibb**
1030 - 1100	**Break**
1100 – 1230	AFIS/ABIS Masterclass **John Riemen** **Caroline Gibb**
1230 - 1330	**LUNCH BREAK**
1330-1500	Latent Print Masterclass – Origins of masked, changed and false minutiae in friction ridge impressions **Alice White**
1500-1530	**Break**
1530 - 1700	Latent Print Masterclass – Origins of masked, changed and false minutiae in friction ridge impressions **Alice White**
1700	**Close of Day**
1900 - 2200	**Conference buffet dinner at 1900 at the Jupiter hotel, Avenida de Republica 46, Lisbon.**

Programme for Tuesday 20th June

0800	**Registration Opens**
0900 - 0930	**Presidents Welcome, Aldo Mattei, EUIAI President** **Welcome from Carlos Farinha, Deputy Director of Policia Judiciária forensic laboratory.**
0930 - 1015	**Keynote Speaker – Alice White** "The Human Element"
1015 - 1100	**Caroline Gibb** Computer-Assisted consensus among Scottish fingerprint experts: Practitioner and Management perspectives
1100 - 1130	**Group photo** **Break**
1130 - 1215	**Aldo Mattei** The standardization process of the fingerprint profession: the European approach
1215 - 1300	**Professor Ivan Birch** Establishing the probative value of gait analysis evidence
1300 - 1400	**LUNCH BREAK**
1400- 1430	**Ray Kane** Case Study – Uncovering the secrets of the locked bathroom
1430 - 1515	**Vincent Bouatou, Deputy Director, Strategic innovation, Public Security and Identity, Idemia** How AI helps combat criminal activities
1515 – 1545	**Break**
1545 - 1615	**Pedro Azevedo** International cooperation in Identification
1615 - 1700	**Dr. Mihaela Aghenitei** Cybercrime in a European context
1700	**Close of Day**

Programme for Wednesday 21st June

0900-0945	**Damianos Chronakis, Europol** European Clearing Board on Innovation: The Core Group on Facial Recognition Technologies
0945 - 1030	**Sergi Claveria and Roger Heredia** WET UCIO and POSME, the two new powder suspension developers created by Mossos d'Esquadra (Police of Catalonia)
1030 - 1100	**Break**
1100 - 1145	**Dr. Mihaela Aghenitei** New trends in cybercrime
1145 - 1230	**Dr Richard Wilson, Dr Beth McNash** What lies beneath?: Peeling back the layers on forensic document evidence
1230 - 1330	**LUNCH BREAK**
1330 - 1415	**Olena Chaban** Genetic data for criminal justice in Ukraine
1415 - 1500	**Alice White** Foundational Skill Sets for Making Suitability Decisions for Friction Ridge Impressions
1500 - 1530	**Break**
1530 - 1615	**Maria C. Ruggiero, Thales** Biometric Technology – Past to Present
1615 - 1700	**Dr. Heidi Sievers and Austin Sievers** The IMPACT of Improper Bloodstain Pattern Identification and Interpretation
1700	**Closing remarks**

Conference Presenters

Welcome speech presented by Deputy National Director of Policia Judiciária

CARLOS ALBERTO LOPES FARINHA, born in Tomar, on 10 December 1958.
He is Deputy National Director of the Judiciary Police, since July 27, 2018
PhD candidate in Criminal Sciences at the Faculty of Law of the University of Coimbra.
He joined the Judiciary Police in 1981 as a Criminalistics Expert, promoted to Agent in 1989, to Criminal Investigation Coordinator in 1995 and to Senior Coordinator in 2008, He headed the Departments of the Judiciary Police in Funchal, Leiria and Lisbon.
He was Director of the Laboratory of Scientific Police of the Judicial Police from April 2009 to 26 July 2018.
He represented Portugal at ENFSI and AICEF, served on the Interpol Steering Committee for Forensic Sciences and participates in the European DVI Response Structure, regarding human identification, having been appointed Chairman of the EUDVI Network, for the period from 2022 to 2024.
He has participated, as a speaker, in national and international conferences.
He has collaborated, as trainer, with several entities, having published several chapters, studies and scientific articles
Named Honorary Associate of the Portuguese Association of Forensic Sciences.
Accredited with the symbol of High Police Mandates, of Iberpol.
Member of the Management Board of Cepol
Praised by the Regional Government of Madeira, the Civil Government of Leiria and the Attorney General of the Republic.
Distinguished with the Medal of Honour, Gold Grade, by the Municipality of Tomar and with the Police Merit Cross, by the Maritime Police, in 2019.

Keynote Speaker

Alice White has been confirmed to be our 2023 Keynote Speaker.
Alice's Keynote topic is **The Human Element.**

Alice will talk about the importance of supporting examiners, especially during times of high stress. She will share her experiences as a member of the Las Vegas community and as a manager having to help with the response to the 2017 Las Vegas Route 91 Harvest Festival Shooting.
Alice White has been a lecturer and trainer in the friction ridge discipline for over 20 years. She is the founder and owner of Evolve Forensics, a training and consulting company. Alice has a Bachelor of Science in Biology from the University of Alaska, Anchorage and was the manager of the Latent Print Detail of the Las Vegas Metropolitan Police Department for 12 years. Alice was involved in several

high-profile cases during her tenure in Las Vegas and has testified as an expert in over 70 criminal trials and hearings in North America. Alice has been an active member of several working groups and professional committees throughout her career. She has published multiple articles and provided lectures, workshops, and courses throughout the United States and beyond.

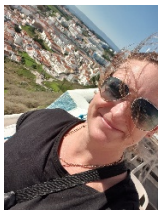
Workshops

Origins of Masked, Changed, and False Minutiae in Friction Ridge Impressions

Instructor: Alice White

Each time the ridged skin of the hands or feet contacts a surface, a unique impression of the skin's features is recorded. This means each impression truly only "matches" itself. Two impressions from the same region of ridge skin will inevitably display differences due to the recordings occurring at different moments in time and under different conditions. When conditions are ideal, the feature sets recorded in two impressions of the same region of skin bear remarkable similarities and no "significant" differences. What counts as an insignificant difference? If the examiner notices that the latent print appears to have been made by a finger that was sliding upward under high deposition pressure, the examiner can anticipate that the ridge widths and ridge spacings will be variable through the latent print and these widths and spacings will be recorded differently in the exemplar print. These differences are expected and insignificant. But what if an entire ridge or minutia is missing? What if there is an extra ridge or minutia in one of the impressions? Depending on the totality of the feature sets in the latent and exemplar prints, these differences can be quite significant. This workshop will lead attendees through some of the causes of missing and extra minutiae with ground truth examples of how different distortion issues can create these more troubling differences.

AFIS / ABIS Master class

Instructors: John A.J.M. Riemen, Manager National Criminal ABIS Dutch Police and Caroline Gibb, Forensic Scientist

John A.J.M. Riemen is the lead biometric specialist and manager of the national criminal ABIS at the Center for Biometrics of the Dutch Police.
He is a specialist in the use of forensic biometric technologies, identity management, identity fraud and process development and design in the field of biometrics.
John has worked for more than 32 years in the field of law enforcement and forensic investigation. He also serves as the vice chair of the Interpol Disaster Victim Identification friction ridge working group and is member of the IDEMIA executive users' board.

Caroline Gibb is an experienced fingerprint subject matter expert with a strong background in forensic science. She is currently pursuing a doctoral degree at the University of Twente, where her research focuses on computer-assisted consensus approaches to support human judgment and decision-making under uncertainty. Before her doctoral studies, she spent two years at the Netherlands Forensic Institute (NFI) after relocating from Melbourne, Australia in March 2018. Prior

to her relocation, Caroline spent 13 years as a Forensic Officer with the Victoria Police Forensic Services Department. She holds a Certificate of Fingerprint Expertise from Australia and has extensive knowledge and experience in biometric systems (AFIS/Live scan), fingermark crime scene recovery and laboratory processing, mortuary attendance, friction ridge analysis and interpretation, and expert witness reports and testimony.

The use of biometric technology in the forensic domain has been around for decades and has proven to be a successful operational tool. Biometric technology is rapidly advancing and Artificial Intelligence (AI) is already part of it. Therefore, it is important that Law Enforcement Agencies remain informed of the system capabilities, and limitations in the forensic scenario. This Masterclass will include an overview of AFIS/ABIS process and practice in a forensic operational environment. Discussions are aimed at both managers and end-users with focus on human-computer interaction and how organisations and managers can best use the system to support the human expert. We discuss factors that affect AFIS/ABIS performance, human and AFIS/ABIS limitations, and how strategies implemented in the AFIS workflow can better support the forensic process by implementing safeguards in the AFIS/ABIS to protect examiners against bias and error. These include integrated workflows that manage context and minimize bias, and implemented strategies like GYRO on your AFIS, automated reports, and technical requirements like self-calibrating screens.

This masterclass offers the audience a toolbox to identify risk factors, recognize the limitations, and identify possible effective strategies in the AFIS/ABIS workflow.

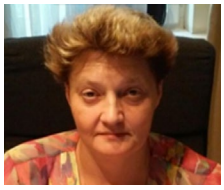
At this end of this Masterclass attendees will be able to

1. Identify factors that affect AFIS/ABIS performance, including organizational factors, human factors, and the system set-up
2. Recognize the limitations of the human-computer interaction
3. List recommended strategies to reduce error in the forensic workflow

Presentations

Cybercrime in a European context

Dr. Mihaela Aghenitei/Dr. Adriana Iuliana Stancu, Dunarea de Jos University Galati
presented by Dr. Mihaela Aghenitei



Dr. Mihaela Aghenitei is a PhD Lecturer at the Faculty of Law and Administrative Sciences at the University of the “Lower Danube” and participates in a grant funded from the funds of the research project carried out by the University "Lower Danube" from Galati. She is Director of the Research Center of the Faculty of Law and Administrative Sciences and member of the Association of Criminalists from Romania, member of ELI and ESIL. She has published 81 articles indexed in national and international databases and 5 specialized books in criminal law.

In the Official Journal of the European Union, series L134/15 of May 11, 2022, Council Decision (EU) 2022/722 of April 5, 2022, authorizing member states to sign, in the interest of the European Union,

the Second Protocol was published additionally to the Cybercrime Convention regarding enhanced cooperation and the disclosure of electronic evidence.
In this sense are also the essential Decisions of the Court of Justice of the European Union from October 2020 as well as the increasingly frequent requests of the Member States regarding a legal framework organized at the level of the European Union in relation to the retention of data for the purpose of research and criminal prosecution.
This article aims to provide information on developments in international, national, and European Union legal instruments on computer crime.

New trends in Cybercrime

Prof. Dr. Gheorghe Popa/Dr. Mihaela Aghenitei/Dr. Ana Maria Barbu, Association of Criminalists from Romania/Dunarea de Jos University Galati presented by Dr. Mihaela Aghenitei

Cybercrime imposes ever-increasing costs on the global economy.
In the past, cybercrime was mainly committed by individuals or small groups. Today, highly complex cybercriminal networks bring together individuals from around the world in real-time to commit crimes on an unprecedented scale.
The Convention on Cybercrime, also known as the Budapest Convention, is the first international treaty on crimes committed over the Internet and other computer networks, dealing with copyright infringement, computer fraud, child pornography, hate crimes., and network security breaches. It also contains several powers and procedures, such as searching computer networks and lawful interception.
The convention establishes as its main purpose the protection of society against cybercrime by criminalizing such conduct and adopting sufficient powers to combat such crimes, by facilitating their detection, investigation, and prosecution both domestically and internationally and by ensuring arrangements for fast and reliable international cooperation.

International cooperation in Identification

Pedro Azevedo, Polícia Judiciária, Lisbon

Pedro Luis Alves Azevedo was born in Lisbon, on 15 January 1966.
He is a Criminalistics Expert (fingerprints), since April 1999.
He has a degree in Social Sciences, Minor in Political and Administrative Science.
He is an accredited trainer, by the Institute of Employment and Professional Training.
He is a holder of the DVI Course.
Represents the Judiciary Police at AICEF.
He is part of the team integrating the DVI European Response Structure for Human Identification.
He has participated as a speaker in national conferences and seminars.
He has collaborated, as a trainer, with various entities.

This presentation is a case study and considers: How does a simple and routine case, such as the identification of people admitted to hospitals but unable to identify themselves, become a case of international cooperation

Establishing the Probative Value of Gait Analysis Evidence

Professor Ivan Birch

Professor Ivan Birch is Expert Witness in forensic gait analysis with Sheffield Teaching Hospitals NHS Foundation Trust and Emeritus Professor of Human Sciences. 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 Chartered Society of Forensic Sciences, an accredited forensic practitioner in forensic gait analysis, and holds the society's certificate of professional competence in this area of practice. In 2015 he was awarded the status of the Chartered Scientist by the Science Consultant Council and College of Podiatry in the UK for his work in forensic gait analysis. Ivan is included on the National Crime Agency Specialist Operations Centre Expert Witness Advisers Database in the UK and has more than 35 years' experience of gait analysis.

Gait analysis is now widely used as a contributor to perpetrator identification. To date, expert opinions about the probative value of observed features of gait have been based primarily on the individual expert's experience and expertise. This presentation will describe a project to develop a probabilistic methodology that combines the use of a validated gait analysis tool with empirical data about within- and between-person variation in gait, to generate likelihood ratios for gait observations made from video footage. The project sits alongside proposals for a collaborative exercise to calibrate experts' opinions, and seeks to explore how such an approach informs, complements and supports the expert in providing effective and reliable evidential use of gait analysis.

How AI helps combat criminal activities

Vincent Bouatou, Deputy Director, Strategic Innovation, Idemia

Vincent Bouatou is the Deputy Director, Strategic Innovation within IDEMIA's Public Security and Identity (PSI) business unit in Paris, France. In his current role, Vincent is responsible for the strategic orientation of products and services within PSI. He and his team provide input on strategy, stakeholder engagement and aid key priorities and projects of a strategic nature such as new verticals or disruptive technologies. He also supports the product lines with their stakeholder engagements.

Vincent has spent most of his professional career within IDEMIA's research and development division. As an expert in biometric technology with over 20 years' experience within the industry, Vincent has led several research and development programs dedicated to developing biometric

technology. He also holds a number of patents in the field of biometrics and other identification technologies. His focus has been on introducing IDEMIA's technologies to new markets.
Examples of Vincent's previous projects include:

- Collaborating with Valeo, a vehicle equipment manufacturer, on several projects including overseeing the development of the first prototypes of camera-based Driver Monitoring Systems. These solutions aim to keep road users safe by detecting distracted driving.
- Participating in the conceptualization phase of India's Aadhaar system, to date the largest biometric system in the world. Launched in 2009, this project assigns a unique identification number to 1.2 billion people.
- Founding a joint research lab between IDEMIA and one of the leading French IT engineering schools (Telecom ParisTech). This project focuses on academic research for identity management and security.

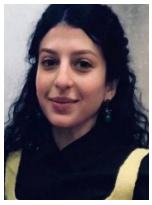
Before his current post at IDEMIA, Vincent was the Director of Innovation Lab. He has also held the position of Director of Business Support and Innovation.
Vincent is a native French speaker and speaks English fluently.
Vincent holds a BSc Information Technology from Ecole Polytechnique, France, and an MSc Information Technology from Telecom ParisTech, France.

As criminal activities become increasingly complex and sophisticated, law enforcement agencies need to make sure they are always two-steps ahead and leveraging technological advancements can help them keeping that edge. Innovative solutions in biometric and analytics software, can help police forces gather, analyze, and share information faster and more efficiently.

However, the use of new technology raises legitimate concerns about privacy and potential misuse. It is therefore crucial to ensure that these technologies are developed, assessed and put to use in a transparent and ethical manner, so that public trust remains strong about their deployment. As a responsible leader, IDEMIA has developed a specific approach provide transparent, independently tested technologies, so that our customer can rest assured that the technologies they deploy to protect the citizens are efficient, safe and fair.

Genetic data for criminal justice in Ukraine

Olena Chaban, University College London



Dr Olena Chaban researches both the theory and practice of a range of different areas of law, with a comparative focus. She is an Honorary Research Fellow at University College London`s Faculty of Laws since June 2022 and has been working on the governance of genetic data in an international context.
Her research is supported by the British Academy`s *Researchers at Risk Fellowships* Program and funded by the Nuffield Foundation. She is admitted to the Bar in Ukraine.
She is available on Twitter: @chaban_olena and Mastodon: @Olena@eupolicy.social.
Most European countries have national DNA databases holding electronic records of DNA from crime scenes, as well as some categories of individuals. They can be a useful tool for prosecuting

offenders, acquitting innocent parties, and identifying miscarriages of justice. Despite the technology is error-prone, it is still considered reliable enough for use in the criminal justice system.
The necessity to create a DNA database in Ukraine was heightened by both the wartime context and the requirements placed by European Union. In 2022 the Ukrainian Parliament created a legal framework for the National DNA database in Ukraine by enacting a law 'On State Registration of Genomic Information of a Human'. The law provides a regime for mandatory and voluntary registration of genetic data to foster criminal justice and for identification purposes. It also introduces additional categories of those who are subjected to a mandatory collection of samples, testing, and registration of genetic data when martial law is in place.
Some statutory procedures created by Ukrainian law require improvement to comply with the jurisprudence developed by ECtHR and CJEU as for the limits of DNA databases, the others should be accorded with public international law. Efficient enforcement mechanisms are also vital considering the 'shared' nature of genetic data, forensic genetic genealogy, and how much is at stake with a DNA database. The existing regime of control, envisaged by law, competencies, and capacities of the Ombudsman as a data protection institution can hardly be considered sufficient to ensure independent and systematic enforcement.
The passing of the Law raises remaining concerns that will have to be addressed in the future to bring Ukrainian data protection in line with European statutory and case law to comply with the Association Agreement, as well as raising further policy considerations that will need careful refinement.

European Clearing Board on Innovation: The Core Group on Facial Recognition Technologies

Damianos Chronakis, Europol

Damianos Chronakis is a specialist in biometrics, technology, and innovative solutions, currently working at the Innovation Lab of Europol. He began his career in 2003 with the Hellenic Police, where he worked on topics such as counter-terrorism, aviation security, and information management. In 2017, he joined Europol and is now responsible for implementing biometric identification technologies within the Operations Directorate. He provides subject matter expertise on topics such as the draft AI Act and the implementation of interoperability regulations. He currently serves as the Chair of the Core Group on Facial Recognition Technologies of the EU Clearing Board on Innovation, a group of experts in relevant technologies from Law Enforcement Agencies of the 27 Member States and 4 Schengen Associated Countries (SAC). The group was established in 2021 with the aim of promoting the ethical and responsible use of facial recognition technology for law enforcement purposes. Damianos holds a MA in Terrorism and Security from the University of Salford.

The presentation discusses the work of the Core Group on Facial Recognition Technologies, a joint initiative by Europol and Italy, within the framework of the European Clearing Board on Innovation to address the increasing reliance on Facial Recognition Technologies (FRT) by law enforcement agencies across Europe. With FRT systems being developed and used in at least 20 EU Member States, the group aims to serve as a central reference point for knowledge, training, and best practices in FRT for investigative purposes. The group's mission includes adopting international

standards, promoting knowledge exchange, fostering synergies between national projects, advocating for ethical and responsible FRT use, and shaping a common position on legislative and policy debates. The presentation outlines the group's work plan on relevant methodologies, training programs, utilization of synthetic media, and engagement with stakeholders, highlighting the significance of these efforts in enhancing the effective and responsible use of FRT in law enforcement within Europe.

WET UCIO and POSME, the two new powder suspension developers created by Mossos d'Esquadra (Police of Catalonia)

Sergi Claveria and Roger Heredia

In this presentation the composition of the chemical, the validation tests and the uses of Wet UCIO and POSME will be covered. Wet UCIO is used for the development of fingermarks on adhesive surfaces and POSME is used on difficult surfaces (wetted surfaces, greasy and oily surfaces, aged fingerprints, and also for FP development on human skin).

Sergi Claveria, scientific policie of Mossos d'Esquadra. Degree in Law and Graduated in Criminology.
Working in the central fingerprint development laboratory of Mossos d'Esquadra since 2006.
Current member of the Steering Committee of the ENFSI fingerprint group.
Co-author of the two WET UCIO and POSME papers mentioned above, and author of one "historical" paper about the origins of powders (*Who Actually Discovered Fingerprint Powders?*, JFI, Vol.72, No.1, 2022, pp 22-32)
My second historical paper will be published (confirmed) in the third issue of the JFI. This paper outlines what were possibly the five earliest methods/reagents of fingerprint development (documented in the 1860s and 1870s).

- Roger Heredia, scientific policie of Mossos d'Esquadra. Degree in Law.
Working in the central fingerprint development laboratory of Mossos d'Esquadra since 2008.
He was a member of the Steering Committee of the ENFSI fingerprint group for 4 years.
Co-author of the two WET UCIO and POSME papers mentioned above.

Computer-Assisted Consensus Among Scottish Fingerprint Experts: Practitioner and Management Perspectives

Caroline Gibb, Derek Brown, Joanne Farr, Nicola Hughes, Ewan MacLeod, Isabel Paterson, Zoe Paterson, Brian Robertson, Jonathan Scott, The University of Twente, The Netherlands, The Netherlands Forensic Institute, The Scottish Police Authority - Forensic Services (Fingerprints) presented by Caroline Gibb

The subjectivity of forensic fingerprint examination can lead to variability in the features used by examiners during analysis and interpretation. This can result in differences of opinion, affecting the

reliability of reported outcomes. To address this issue, a pilot study was conducted with the Scottish Police Authority using a computer-assisted consensus approach. Nine accredited fingerprint experts utilised the Picture Annotation System (PiAnoS) system to independently analyse, compare and evaluate 10 crime scene marks of known ground truth. The examiners then attended a two-day workshop where they reached consensus judgments on the same crime scene marks, beginning with a consensus feature set. The pilot study aimed to explore the benefits of using computer-assisted approaches in friction ridge examination, such as knowledge exchange, reduced variability, and better-informed outcomes. Computer-Assisted consensus approaches have the potential to positively impact the future of fingerprint analysis and reporting by supporting technical discussions between experts.
In this presentation, Scottish fingerprint experts involved in the computer-assisted consensus pilot will share their perspectives on the benefits, challenges, and potential impact on future fingerprint analysis and reporting. The discussion will cover both practical and managerial aspects of using this method.

Uncovering the secrets of the locked bathroom – case presentation

Ray Kane, An Garda Siochana

Detective Sergeant Ray Kane has been a member of An Garda Siochana (Irish Police Force) since 1992. In 1999 he joined the Fingerprint Section and following training in Ireland and with the National Training Centre in England, became a Fingerprint Expert in 2003. He has spent his career in Fingerprints working in AFIS comparison, the visualization laboratory and at major crime scenes both as a Scene Examiner and since 2007 as a Crime Scene Manager. He has given expert fingerprint evidence at all levels of Court in Ireland and his evidence has resulted in several stated cases.
In 2019 the Garda Fingerprint Bureau merged with Forensic Science Ireland and Ray has been on secondment there since. He works mainly with the Forensic Scientists assisting in their mentoring and progression to becoming the future experts.
Ray received a National Diploma in Police Studies in 1995 from the Garda College, a Degree in Public Management Administration of Justice from the Institute of Public Administration in 2007, a Foundation Degree in Science in Fingerprint Identification in 2012 from Teesside University and a Post Graduate Diploma in Crime Scene Investigation from the Chartered Society of Forensic Sciences in 2016.

This presentation details an incident which took place in a one-bedroom apartment. The occupant hadn't been seen for several days and was found deceased inside a locked bathroom. Ridge detail apparently in blood were recovered from the scene and were not matched to the deceased which raised concerns about how they were left in a locked room. This investigation also involved the identification of plantar impressions which is rare in Ireland and effective analysis by the fingerprint examiner involved.

The standardization process of the fingerprint profession: the European approach

Aldo Mattei

Since 2004 the Fingerprint Working Group of the ENFSI started the process of developing a Best Practice Manual, which was incredibly boosted by a funding scheme made available through the European Commission (EC). The so called ENFSI Monopoly Program (MP) 2012, established among others, the Project no. B6 consisted in the publication of the Best Practice Manual for Fingerprint Examination in 2015. The approach of this document was the first attempt to establish a common ground through 71 laboratories of 38 nations of the Council of Europe.
Following this great achievement, within the MP 2016, the Project no. G10 consisted in the realization of the Best Practice Manual for Fingerprint Visualisation at the scene of crime. This document is aimed to cover the detection of friction ridge marks at the scene of crime, whilst the BPM for Fingerprint Examination covers the laboratory activities.
Finally, considering the huge standardisation effort made in the recent years in the fingerprint world in the USA, through NIST OSAC subcommittees dedicated Standard Developing Organisation (SDO), the American Standards Board (ASB), there is a consistent on-going process aimed to standardise all the aspects of the fingerprint profession. Besides, the UK Forensic Science Regulator produced other relevant documents aimed to norm the fingerprint profession in the UK. All these valuable publications need to be considered and carefully evaluated also by the European countries. As a result, the ENFSI FINWG, through the on-going MP 2020, WP 11, is currently developing a reference document, the 2nd edition of the Best Practice Manual for Fingerprint Examination, which is aimed to suggest the recommended approach to all the various aspects of the friction ridge profession. An outline of the draft manual will be presented, thus demonstrating how crucial is the international cooperation for the advances of forensic sciences and how is instrumental the EC financial support towards the harmonization of forensic processes and procedure in the friction ridge domain across Europe.

Biometric Technology – Past to Present

Maria C. Ruggiero. Law Enforcement & Forensic Specialist, Thales

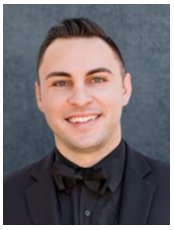
This presentation will discuss the evolution of AFIS systems and the technology now available to examiners in conducting friction ridge examinations, in a world requiring faster answers, higher quality and more accountability.
Maria will share her experiences and observations as an examiner over the past 30 years and will focus on how technology can assist with in depth documentation of the examination process, from the crime scene to the laboratory, and to the courtroom. Where examinations historically took weeks and months to complete, technology now provides the ability to conduct such examinations in a matter of days, with the necessary due process and security required for these sensitive operations.

Maria's career in forensics began nearly 30 years ago in small US police agencies, where she conducted crime scene investigations and friction ridge examinations. Her final 17 years were with the Los Angeles County Sheriff's Department where she was a supervisor responsible for overseeing the training programs in both Crime Scene Investigation and Friction Ridge Examinations. Maria

holds a bachelor's degree in Public Administration, with a concentration in Criminal Justice, and a Masters Degree in Negotiation and Conflict Management both from California State University, Dominguez Hills. She is a Technical Assessor for the ANSI National Accreditation Board (ANAB). From 2008 to 2011, Maria served as a member of the Expert Working Group on Human Factors in Latent Print Analysis, sponsored by the National Institute of Justice. She was a member of both the Scientific Working Group on Friction Ridge Analysis, Study and Technology (SWGFAST) and the Organization for Scientific Area Committees (OSAC) Friction Ridge Subcommittee where she served on the Executive Board as Secretary from 2017 through 2019. Maria's term ended on October 1st, 2019, however she remains as an affiliate member of the OSAC Friction Ridge Subcommittee.
In May 2022, Maria Ruggiero joined Thales DIS in Pasadena as a Law Enforcement & Forensic Specialist; she delivers training to Thales customers on the various biometric products and serves as consultant for Thales Product teams.

The IMPACT of Improper Bloodstain Pattern Identification and Interpretation

Dr. Heidi Sievers and Austin Sievers

Heidi Sievers holds a PhD in Criminal Justice and a Master's in Forensics. She is an International Association for Identification Certified Bloodstain Pattern Analyst (CBPA) and Certified Crime Scene Analyst (CCSA). She is Chair of the Bloodstain Pattern Analysis Board for the Florida Division of the IAI. She is a former forensic investigator and human remains detection canine handler. Currently, she is an undergraduate and graduate professor in criminal justice, crime scene technology, and forensic science at various universities. She has completed over 700 hours of forensic-related training courses. She is the owner of Sievers Forensics which provides forensic and bloodstain pattern analysis consultation and training to various agencies worldwide, including law enforcement and the military. She has been featured as an expert correspondent for Fox News, Law and Crime, and other media outlets. Her training courses have been IAI-approved for initial and re-certification by the bloodstain and crime scene boards. She has also been acknowledged as an International Association for Bloodstain Pattern Analysts approved instructor.

Austin Sievers is a former certified law enforcement officer through the State of Florida previously serving Pasco Sheriff's Office. Prior to being assigned to patrol, he was a forensic investigator with the same agency. Given the unique experience of forensics prior to certified law enforcement, he provided forensic processing training to a number of deputies both within his squad as well as the agency overall. Austin holds a Bachelor of Science Degree in Forensic Science. Currently, Austin serves as a trainer and consultant with Sievers Forensics, which focuses on forensic case and evidence review as well as providing forensic training to both academic institutions as well as law enforcement agencies. Austin's specialty is providing the unique training of forensics for law enforcement to assist deputies and detectives in understanding evidence and processes as well as providing the skills to accomplish them in the event they do not have access to a forensic unit. His goal is to ensure all entities of law enforcement have a comprehensive understanding of the role of forensics and evidence. He also holds a State of Florida Private Investigator Class C license.

Bloodstain Pattern Analysis continues to grow as a highly sought-after specialty in the profession of forensic science. This type of evidence requires significant analysis and, often, the inclusion of experts within the investigation. With bloodstains needing to be interpreted, there is a heightened sense of subjectivity. This is exemplified through opposing expert opinions in the courtroom. Each finalized reconstruction or opinion can be traced back to the beginning: the identification of bloodstain patterns and the interpretation of the meaning of those bloodstains. This is often where the errors lie. The question remains as to what the true impact is with improper identification and interpretation as the root of our reconstruction.

Foundational Skill Sets for Making Suitability Decisions for Friction Ridge Impressions

Alice White

There are three primary skill sets that create the foundation for determining which marks (latent prints) should move forward to comparison: 1) search parameters, 2) minutiae detection, and 3) distortion interpretation. The term "search parameters" refers to where (which potential anatomical donor regions) and how (potential distal orientations) the mark will be compared. Research has demonstrated that ambiguous search parameters lead to more erroneous exclusions. Can suitability decisions help mitigate these types errors? Research has shown that the number of minutiae detected in a mark strongly influences suitability decisions. Research also shows that minutiae distributions depend on the anatomical region of skin under consideration. Can suitable decisions make accommodations for anatomical region? Furthermore, the ability to locate and mark true minutiae is highly dependent on the examiner's understanding of distortion. Have the examiners been tested to make sure they are able to detect a reasonable percentage of true minutiae and only detect a small, but reasonable, percentage of false minutiae? In this lecture Alice will tie together key research findings with practical experience managing suitability decisions in a latent print unit and training suitability decisions in classes of examiners from a variety of agencies.

What lies beneath?: Peeling back the layers on forensic document evidence

Dr Richard Wilson, Dr Beth McNash, Foster+Freeman


Dr Richard Wilson gained a degree in Chemistry from Loughborough University in 2013 and completed his PhD entitled ‘Lowering levels of heritage crime via novel chemical procedures’ in 2017 at the same institution. Richard has worked for foster + freeman since 2019 and is part of the research team overseeing research activity with a primary focus on fingermark enhancement and questioned document evidence.

Dr Beth McNash gained a degree in Forensic and Investigative Chemistry from the University of East Anglia in 2015 and completed her PhD entitled ‘Forensic evidence enhancement using physiological aspects and processes’ in 2019 at Loughborough University. Beth has worked for foster + freeman since 2019 and is part of the research team overseeing research activity with a primary focus on fingermark enhancement and questioned document evidence.

While traditional techniques have long allowed forensic investigators to positively identify fingermarks on documents of interest, understanding the chronological sequence of events that led to their deposition is still seen as a 'holy grail' for forensic examinations. By way of example, the question of whether a mark is above or below printed text is crucial. The work presented here reveals that a novel application of a recently established fingermark development technique readily allows such differentiation. The process in question allies forensic gelatin lifters with RECOVER, a development system that hinges on the polymerisation of disulfur dinitride. While the latter was specifically developed in its current form for the retrieval of prints from metal surfaces exposed to extreme conditions or washing, its ability to target surface effects allows for visualisation of surface interactions on forensic gelatin lifts. Crucially, in doing so the order in which the lifted material was originally deposited is also revealed. This, therefore, permits clear elucidation of the order of deposition of printed text and fingermarks - and does so both rapidly and in a non-invasive way. The process outlined, combining established technologies and techniques shows great potential in revolutionizing this long sought-after capability.

Poster Presenters

CSI Effect: Fact of Fiction?

Ms Mihaela Nechita and Dr Jo Dawkins, University of Leicester

Since the increased popularity of TV crime dramas such as CSI in the early 2000s, there has been a rise in the number of media centred around the theme of 'crime solving'. This has caused many practitioners and researchers in the criminal justice system to consider the existence of a phenomenon called the 'CSI Effect', potentially impacting upon how juries perceive forensic evidence in a range of settings – from crime scene to court.
This project explored whether or not these claims were substantiated in a UK context, by comparing the opinions of two groups (members of the public and forensic practitioners). Two almost identical questionnaires (one to each group) were administered with a series of questions that included topics such as media consumption habits, types of crimes that should be prioritized for forensic examination, perceived reliability of evidence types, in addition to the supposed forensic awareness of police officers and general members of the public.
The results for both groups were very similar in some areas, such as the apparent levels of trust given to forensic practitioners and the number of hours spent consuming crime centred media. However, they differed in other areas, for example the types of crime centred media consumed and perceived reliability of some evidence types. Practitioners unanimously agreed that the expectations and behaviour of members of the public had been influenced by portrayals of their work within the media. Members of the public also agreed that their perceptions of forensic practitioners had been influenced by media and viewed forensic science in an overly positive, and occasionally somewhat unrealistic way.
Our conclusions suggest that the 'CSI Effect' may exist and might influence individuals to think more highly of certain aspects of forensic science, particularly certain types of evidence. However, a dose of scepticism and realism still remains, as our results show that the effects of the phenomenon may be limited and therefore the impact of the 'CSI Effect' within the criminal justice system may be insignificant.

Human Identification: Development of new techniques for fingerprints recovery

João Paulo Costa and Paulo Martins, Polícia Judiciária

Complying with the provisions of Law No. 67/2017 of August 9th, specifically with article 3, no. 2, this work aims to share with the academic community and professionals in the area of Forensic Sciences, especially those involved in the process of Human Identification through lophoscopy, different solutions and methodologies for the recovering of degraded fingerprints. In the case presented, three different methodological approaches were used to improve and recover degraded fingerprints: forensic photography, collection using a bidimensional mold and exact reproduction of the sample using a three-dimensional mold, all with the aim of discovering and providing the identification of a human body part. After conducting a comparative expert evaluation between the retrieved and collected fingerprint (problem-sample) and a fingerprint provided by the Department of Civil Identification of the Institute of Registries and Notary concerning a missing individual (reference-sample), it was possible to establish the true identification between that part of the human body to an individual. With this new approach, the tree-dimensional mold, we have highlighted the importance of creativity and knowledge dealing with daily problems related with human identification through innovation. This advance is especially relevant in our time, because nowadays war is causing bigger concerns on human identification, for criminal and social reasons.