ICCFS-PT



INTERNATIONAL CONFERENCE ON

CRIMINOLOGY AND FORENSIC SCIENCE

Practice and Theory

BOOK OF ABSTRACTS

29-30 X 2026
Rome, Italy

Organisers:

PAN Rome Scientific Center

University of Gdańsk

Department of Forensic Science

Medical University of Gdańsk 1946

European Forensic Institute

Partners:

Pomeranian Bar Association in Gdańsk

INTERNATIONAL CONFERENCE **ON CRIMINOLOGY AND FORENSIC SCIENCE** - practice and theory

ROME
29-30 X 2026

https://forensic.ug.edu.pl/

ROME
29-30 X 2026
ICCFS-PT

Join us at ICCFS-PT, where theory meets practice!

ICCFS-PT is an interdisciplinary international conference bringing together leading experts from the legal, law enforcement, forensic medicine, and scientific communities to exchange knowledge, share experience, and discuss current challenges and best practices in Forensic Science.

The event will be held in a hybrid format combining in-person sessions with online participation. Attendance is free of charge, ensuring broad accessibility for researchers, practitioners, and professionals worldwide.

The ICCFS-PT aims to foster lasting partnerships between science and forensic practice, while strengthening the international expert community. The conference provides a platform for meaningful discussion on improving evidentiary procedures, responding to evolving crime trends, and addressing the challenges posed by emerging technologies within the justice system.

Particular emphasis will be placed on the development and implementation of innovative, integrated methods and procedures in forensic investigations, as well as promoting interdisciplinary cooperation and continued innovation across the field.



Aneta Lewkowicz

Prof. Aneta Lewkowicz
Head of the Department of Forensic Science,
Department of Substantive Criminal Law and Criminology,
Faculty of Law and Administration, University of Gdańsk

29 OCTOBER 2026

09:00 **Registration**

09:30 **Official opening of the conference**

CHAIR OF THE SESSION
Prof. Aneta Lewkowicz
Head of the Department of Forensic Science, Department of Substantive Criminal Law and Criminology, Faculty of Law and Administration, University of Gdańsk

10:00-10:45 ***A sample of most curious cases in the recent history of forensic medicine in Gdansk***

PLENARY SPEAKER
Prof. Michał Kaliszan
Head of the Department of Forensic Medicine,
Faculty of Medicine, Medical University of Gdańsk

10:45-11:05 ***Challenges facing the functioning of expert witnesses in the justice system (using the proposed amendments to the Polish law on expert witnesses as an example)***

KEY SPEAKER
Prof. Tadeusz Tomaszewski
Head of the Department of Forensic Science,
Faculty of Law and Administration, University of Warsaw

11:05-11:20 **Coffee time**

11:20-11:40 ***Global Forensic Technology Market: Growth Drivers, Regional Dynamics and Structural Change***

KEY SPEAKER
Prof. Joanna Bednarz
Head of the Department of International Business,
Faculty of Economics, University of Gdańsk

11:40-12:00 ***The Male Loneliness Epidemic: Rise of INCELS and Violence Against Women***

KEY SPEAKER
Sarah Crielesi
European Forensic Institute

12:00-12:20 ***Violence risk assessment in forensic practice: between science and judicial decision-making.***

KEY SPEAKER
PhD Agnieszka Welento-Nowacka
Department of Substantive Criminal Law and Criminology,
Faculty of Law and Administration, University of Gdańsk

Prof. Jacek Potulski
Head of the Department of Criminology, Department of Substantive Criminal Law and Criminology, Faculty of Law and Administration, University of Gdańsk

12:20-13:20 **Lunch Break**

29 OCTOBER 2026

CHAIR OF THE SESSION
PhD Tomasz Snarski
Department of Substantive Criminal Law and Criminology,
Faculty of Law and Administration, University of Gdańsk

13:20-14:05 ***Between Criminal Governance and State Resilience: The War on Drugs in Mexico through Inmate Narratives***

PLENARY SPEAKER
Prof. Piotr Chomczyński
Department of Sociology of Art, University of Łódź

14:05-14:25 ***From What Works to What Can Be Trusted: Evidence-Based Criminology, Forensic Science and Artificial Intelligence***

KEY SPEAKER
Prof. Wojciech Zalewski
Dean of the Faculty of Law and Administration, University of Gdańsk,
Head of the Department of Substantive Criminal Law and Criminology,
Faculty of Law and Administration, University of Gdańsk

14:25-14:45 ***Scientific Evidence and Reasonable Doubt in Criminal Proceedings***

KEY SPEAKER
Prof. Antonio Incampo
University of Bari Aldo Moro

14:45-15:05 ***Modern criminal justice and psychology - hearing of a witness by videoconference in criminal proceedings***

KEY SPEAKER
Prof. Sławomir Steinborn
Head of the Department of Criminal Procedural Law and Criminology,
Faculty of Law and Administration, University of Gdańsk

15:05-15:25 ***Philosophical Perspectives on Contemporary Criminology and Forensic Science: Critical Reflections on Methodology, Values, and Legal Frameworks***

KEY SPEAKER
PhD Tomasz Snarski
Department of Substantive Criminal Law and Criminology,
Faculty of Law and Administration, University of Gdańsk

15:25-16:00 **Coffee time**

16:00-18:00 **Guided tour of Rome**

20:00 **Official dinner**

10:00-10:45 – PLENARY SPEAKER

A sample of most curious cases in the recent history of forensic medicine in Gdańsk

The role of forensic medicine expert is to examine different cases of deaths, particularly in initially unexplained circumstances. On the base of the autopsy results one can determine if the death was sudden and natural either was the result of accident or violent behavior, suicide, homicide with contribution of third parties. The successful determination of the cause and mechanism of death depends on the experience, accuracy and the scope of additional tests performed during post mortem examination. Particularly in cases of violent deaths on the base of size, shape, depth etc. of injuries one can determine the mechanism of death and even the tool which was used to cause them.

In the presented work, basing on the archives of Department of Forensic Medicine in Gdańsk and own experience of the author, a sample of most curious and interesting practical cases were discussed. In these unusual cases, deep analysis of the circumstances of death established on the notes from the investigation, together with additional tests and studies performed by forensic experts allowed for determination the actual cause and mechanism of deaths, despite the different initial suspicions. These cases mostly concerned atypical injuries, description of the course of post mortem examinations and reconstruction of mode of their appearance.



Prof. Michał Kaliszan

Head of the Department of Forensic Medicine,
Faculty of Medicine, Medical University of Gdańsk, Poland

Prof. Michal Kaliszan is actually a head of the Department of Forensic Medicine, Medical University of Gdansk, Poland. His professional activity is focused on forensic pathology, including post mortem examination and vital injuries certification in crime victims. The main area of interest include also the issues regarding the estimation of the time of death and deaths from stab wounds. Actually he continues studies on estimation of the time since death based on eyeball temperature measurements, is an inventor of TOD-meter, device dedicated to calculate the time of death from post mortem eyeball temperature. He is also active in Medical Council in Gdańsk, where in the past he lead Medical Court and actually is engaged in ethical issues.

10:45-11:05 – KEY SPEAKER

Challenges for the Polish justice system related to expert opinions in criminal and civil cases

Observations of forensic practice, together with the findings of empirical research, indicate that several adverse trends are becoming increasingly evident in the field of expert witness testimony within the Polish justice system. These include a decline in the quality of expert opinions across various disciplines, as well as a deterioration in the qualifications of candidates seeking appointment as court experts. At the same time, the legal framework governing the activities of experts in criminal and civil proceedings has been widely criticized for lacking modern systemic solutions. The existing regulations are incomplete, outdated, and dispersed across numerous legal acts of different hierarchical status.

For these reasons, several legislative initiatives aimed at enacting a comprehensive Act on Court Experts have been undertaken in the past; however, all of them ultimately proved unsuccessful. At present, work has resumed on a new draft Act, the principal objectives of which are:

- to adapt the legal framework governing court experts to contemporary legal and economic realities, including provisions concerning the legal status of court experts and their rights and obligations;
- to establish a certification system for court experts and expert institutions, enabling appropriate verification of their professional qualifications and the scientific validity of the methods they employ;
- to introduce incentives, including financial incentives, to encourage qualified professionals to undertake the role of court expert; and
- to create a centralized computerized register of court experts, facilitating the appointment of suitably qualified experts in individual cases and enabling effective monitoring and evaluation of the quality of their work.



Prof. Tadeusz Tomaszewski

Head of the Department of Forensic Science,
Faculty of Law and Administration, University of Warsaw, Poland
Plenipotentiary of the Minister of Justice for court experts

Professor of law, full professor at the University of Warsaw, former dean of the Faculty of Law and Administration of the University of Warsaw (2001-2008) and vice-president of this University (2008-2016). He is a long-time chairman of the Scientific Council and vice-president of the Executive Board of the Polish Forensic Society, the chairman of the Scientific Council of the Central Forensic Laboratory of the Police and a member of the advisory committees of the Commander-in-Chief of the Police and the Head of the Central Anticorruption Bureau. Since 2023, he has been the plenipotentiary of the Minister of Justice for court experts and cooperation with expert environment. Author of numerous scientific works devoted to, among others, forensic examination of documents and handwriting, as well as the issues of expert witnesses and their opinions. Since 1996, he has been a court expert in the field of forensics and document examination at the District Court in Warsaw. examination of documents and handwriting, as well as the issues of expert witnesses and their opinions. Since 1996, he has been a court expert in the field of forensics and document examination at the District Court in Warsaw.

11:20-11:40 – KEY SPEAKER

Global Forensic Technology Market: Growth Drivers, Regional Dynamics and Structural Change

The global forensic technology market is growing steadily and attracting significant capital investment. It is expanding significantly, driven by rising crime rates, an increasing number of unsolved cases, and substantial investments in public and private research. Fortune Business Insights (2026) projects the market will grow from USD 6.30 billion in 2025 to USD 11.59 billion by 2034, reflecting a compound annual growth rate of 7.16%. In terms of structural market segmentation, forensic services represent the largest segment, projected to capture a 68.66% share in 2026. Among application areas, DNA analysis maintains market dominance with a 38.26% projected share in 2026, complemented by growing demand in biometrics and toxicology. Forensic laboratories are the primary customers (estimated at 58.77% in 2026), followed by forensic medicine institutes, academic and training centers, and the growing sector of private analytical laboratories and detective agencies. Geographically, North America leads the global landscape with a 37.54% share in 2025 (USD 2.36 billion), supported by strong distribution networks and established legal frameworks. Europe follows as the second-largest market at USD 1.77 billion in 2025, propelled by digital forensics and cybercrime initiatives. Meanwhile, the Asia-Pacific region is projected to record the highest growth rate due to rising crime awareness and rapid forensic infrastructure development. Ultimately, the market trajectory reflects a global transition toward automated, high-throughput, and non-destructive forensic solutions.



Prof. Joanna Bednarz

Head of the Department of International Business, Faculty of Economics, University of Gdańsk, Poland

Joanna Bednarz is an Associate Professor at the Faculty of Economics at the University of Gdańsk. She heads the Department of International Business. Her research interests include entrepreneurship, international business, consumption, and the behavior of young consumers She combines her academic work with her business experience. While working at FMCG companies, she participated in comprehensive new product launches – from identifying customer needs and analyzing market potential to product concept development, project profitability assessment, brand building, and intellectual property protection, and finally to promotional activities and product commercialization. She is involved in the activities of scientific associations: the Polish Economic Society in Gdańsk (Head of the Scientific Council), the University of Gdańsk Publishing House (member of the council), and the IESE Business School Alumni Association of the University of Navarra. She has extensive international experience collaborating with foreign universities: she is a member of the NICE Network, the coordinator of the Erasmus+ Program at the Faculty of Economics at the University of Gdańsk, and a visiting professor at European universities.

11:40-12:00 – KEY SPEAKER

The Male Loneliness Epidemic: Rise of INCELS and Violence Against Women

This presentation examines the intersection between male loneliness, online radicalisation, misogynistic extremism, and violence against women, focusing on the rise of the INCEL ("involuntary celibate") movement and its growing recognition within counterterrorism frameworks. While loneliness alone does not produce violence, digital ecosystems expose vulnerable individuals to extremist narratives that blame women, feminism, and social progress for male suffering. These spaces often function as ideological echo chambers, normalising resentment, glorifying violence, and dehumanising women.

The presentation explores how online forums and manosphere communities target socially isolated men through algorithmic reinforcement, peer validation, and manipulation tactics, including "sock puppet" accounts and fabricated female personas designed to provoke hostility and reinforce misogynistic beliefs. These communities increasingly blur the boundaries between misogyny, political extremism, and religious fanaticism, potentially facilitating more organised ideological violence.

Attacks linked to INCEL ideology have prompted some governments and security agencies to classify misogynistic violent extremism as domestic terrorism, reflecting concerns about its transnational and networked nature. Particular attention is given to online trends normalising coercion and aggression against women, including viral content encouraging men to "practice if she says no, " and narratives portraying rejection as humiliation or oppression. Such discourse risks desensitising audiences to violence and legitimising retaliation.

The presentation also addresses the global rise in femicide and gender-based violence, examining how societies and law enforcement can intervene before violence occurs. It ultimately questions where preventative policing and counter-extremism measures should begin when individuals display clear patterns of radicalisation but have committed no criminal offence, arguing that misogynistic extremism must be understood as both a social and a security issue.



Sarah Crielesi

European Forensic Institute, Malta

Sarah Crielesi is a multidisciplinary lecturer and researcher specialising in criminology, forensic and criminal psychology, terrorism studies, political violence, international security, and intercultural communication. She is currently a Lecturer in Psychology and Criminology at the European Forensic Institute in Malta and Course Coordinator and Lecturer in International Relations and Criminal-Forensic Communication at SSML in Pisa. Her research examines the psychological, political, and socio-cultural drivers of violent extremism, radicalisation, terrorist ideology, and gender-based violence, with particular interests in online radicalisation, political Islam, and the psychology of ideological movements. Her interdisciplinary expertise brings together criminology and psychology with international relations, conflict studies, linguistics, and intercultural communication. She has extensive international teaching and research experience across the UK, Europe, North Africa, and Turkey, and has contributed to academic conferences, professional training, and counterterrorism initiatives, including consultancy work with UK counterterrorism policing.

12:00-12:20 – KEY SPEAKER

Violence risk assessment in forensic practice: between science and judicial decision-making

The assessment of the risk of violence is one of the important elements supporting judicial decisions. Although empirical research indicates the superiority of structured methods in risk estimation, it also cautions against relying on them uncritically when making decisions concerning an individual's liberty. Scientific studies have made it possible to identify risk factors, inter-rater agreement, and the predictive validity of structured assessment tools. It should be remembered, however, that decisions are still made within an area of uncertainty. This raises questions about the consequences both for public safety and for individual liberty. The presentation analyzes the limitations of violence risk assessment from the perspective of current knowledge, as well as the need to define the purpose it should serve for the justice system. Particular attention will also be devoted to differences in how court-appointed experts and the legal system understand the meanings of such concepts as risk, danger, and probability. From psychiatric and legal perspectives, it will be indicated that it is important to use evidence-based structured methods for assessing the risk of violence solely as support for decision-making, and not as a source of certainty regarding future behavior. Reliable forensic psychiatric practice depends not only on the standard of assessment, but also on identifying its limitations in relation to the purpose it is intended to serve.



PhD Agnieszka Welento-Nowacka

Department of Substantive Criminal Law and Criminology, Faculty of Law and Administration, University of Gdańsk, Poland

Agnieszka Welento holds a PhD in medical sciences, awarded by the Institute of Psychiatry and Neurology in Warsaw in 2022. Since 2023, she has been employed as an Assistant Professor in the Department of Substantive Criminal Law and Criminology at the Faculty of Law and Administration, University of Gdańsk. She has been a board-certified specialist in psychiatry since 2011. Since 2013, she has served as Head of a low-security forensic psychiatric ward at the Psychiatric Hospital in Starogard Gdański. She is the author and co-author of publications in the field of forensic psychiatry. Her research focuses primarily on violence risk assessment and management. She translated and implemented the Polish versions of the HCR-20 Version 3 and SAPROF violence risk assessment tools. She is a member of the Executive Board of the Polish Society of Forensic Psychiatry and a member of the Forensic Psychiatry Section of the Polish Psychiatric Association.



Prof. Jacek Potulski

Head of the Division of Criminology, Department of Substantive Criminal Law and Criminology, Faculty of Law and Administration, University of Gdańsk, Poland

Jacek Potulski holds a postdoctoral degree in law (habilitation), awarded on 15 April 2019. He is a University Professor in the Department of Substantive Criminal Law and Criminology at the Faculty of Law and Administration, University of Gdańsk, where he also serves as Head of the Criminology Division. He has been employed at the Faculty of Law and Administration of the University of Gdańsk since 2003, initially as an Assistant Lecturer (2003–2005), subsequently as an Assistant Professor (2006–2019), and since 2019 as a University Professor. He teaches courses in criminal law. He has practised as an attorney-at-law since 2009. He is a co-author of the LEX Legal Information System and a contributor to the System of Criminal Law published by C.H. Beck. From 2012 to 2017, he served as a member of the Regional Commission for the Adjudication of Medical Events. In 2022–2023, he was a member of the Scientific Council of the United Nations Global Compact Anti-Corruption Programme. He is also a lecturer at the National School of Judiciary and Public Prosecution and served as a member of the Scientific Council of the Institute of Psychiatry and Neurology in Warsaw from 2023 to 2026.

13:20-14:05 – PLENARY SPEAKER

Between Criminal Governance and State Resilience: The War on Drugs in Mexico through Inmate Narratives

This presentation examines how the proliferation of organized crime has transformed social and economic life in marginalized communities in Mexico. Drawing on 62 in-depth qualitative interviews with incarcerated individuals convicted of organized crime, it explores the relationship between criminal governance, illicit opportunities, and adaptation to the pervasive presence of drug trafficking organizations (DTOs). The analysis shows how criminal organizations increasingly assume informal functions associated with the state, including the enforcement of rules, provision of security, and regulation of local disputes. At the same time, the presentation examines the resilience of the Mexican state and its institutions in responding to the expansion and entrenchment of organized crime. The findings demonstrate how institutional weakness, corruption, and limited access to legitimate economic opportunities create conditions in which illicit activities become viable alternatives to formal employment. Criminal participation therefore emerges not only through coercion or conventional recruitment but also through adaptation to an environment in which organized crime becomes embedded in everyday community life. The presentation argues that criminal governance, illicit opportunities, and state resilience must be examined together to understand the changing relationship between organized crime, communities, and the state.



Prof. Piotr Chomczyński

Department of Sociology of Art, University of Łódź

Piotr Chomczyński, PhD, Professor at the University of Lodz, is a criminologist, sociologist, and American studies scholar. Since 2015, he has conducted ethnographic fieldwork in Mexico among communities involved in drug trafficking and in correctional facilities. Since 2021, he has been a member of the international research project Crime in Latin America, which conducts criminological research in Honduras, Mexico, Argentina, Chile, Colombia, Bolivia, and Brazil. Since 2025, he has also been a member of an international research project on Child Criminal Exploitation involving researchers from the UK, Norway, Sweden, and the Netherlands. He is the author of articles published in international academic journals on drug-related crime and organised crime in Latin America. He is also a co-editor of the latest Polish criminology textbook, Kryminologia – teoria i praktyka (PWN, 2024). He has served as an expert for U.S. courts in cases involving Latin American criminal organisations

14:05-14:25 – KEY SPEAKER

From What Works to What Can Be Trusted: Evidence-Based Criminology, Forensic Science and Artificial Intelligence

Evidence-based criminology has traditionally asked which interventions reduce crime and reoffending. This paper argues that its next stage should encompass the entire production and use of knowledge across criminology and forensic science. This includes evidence about the causes of offending, the reliability of detection and attribution technologies; the quality of investigative interviewing, the identification of victims individual needs; and the consequences of decisions made throughout the criminal process. Artificial intelligence can integrate heterogeneous data, reveal patterns, support the analysis of digital and biological evidence, and assist triage and risk assessment. Yet predictive accuracy alone is not evidence of justice or effectiveness. Training data may reproduce selective enforcement; opaque models may conceal error rates and causal assumptions; and automation may amplify confirmation bias. Likewise, innovative methods of interviewing or offender detection should be adopted only after independent validation in realistic settings and continuous assessment of false postives, distributional effects, and impact on victims. The paper proposes an integrated model connecting empirical criminology, victimology, and forensic science through four requirements: scientific validity, procedural fairness, human oversight, and outcome evaluation. The future lies not in replacing professional judgment with machines, but in making every inference and intervention testable, transparent, contestable, and responsive to the people affected.



Prof. Wojciech Zalewski

Dean of the Faculty of Law and Administration, University of Gdańsk, Head of the Department of Substantive Criminal Law and Criminology, Faculty of Law and Administration, University of Gdańsk, Poland

Wojciech Zalewski, PhD habil., is Professor of Criminal Law and Criminology and Dean of the Faculty of Law and Administration at the University of Gdańsk, Poland. He also heads the Department of Substantive Criminal Law and Criminology. His research focuses on criminal law, criminology, victimology, criminal policy, restorative justice, penal populism and the philosophy of punishment. He is the author and editor of numerous publications, including monographs on restorative justice and criminal-policy responses to persistent offenders. His current research explores evidence-based criminology, the limits of punishment, penal abolitionism, the preventive turn in criminal justice, and the impact of artificial intelligence and new technologies on crime control and judicial decision-making. Professor Zalewski has participated in numerous international research projects and conferences and has cooperated with judicial institutions, professional bodies and non-governmental organisations. He is a former member of the Board of Governors of the International Association of Law Schools and is active in international criminological and legal-academic networks. He also serves as an external examiner at the University of Mauritius in the fields of law and criminology, evaluating course examinations as well as bachelor's and master's dissertations.

14:25-14:45 – KEY SPEAKER

Scientific Evidence and Reasonable Doubt in Criminal Proceedings

The relationship between scientific evidence and the standard of proof beyond a reasonable doubt raises a fundamental epistemological question: to what extent can general scientific knowledge justify a judicial conclusion concerning an individual event?

This lecture examines the distinction between general and individual causation, highlighting the limits of statistical probability in establishing criminal responsibility. Scientific laws may demonstrate that a given factor can produce a certain outcome, without proving that it actually caused the event under examination. The problem becomes particularly evident in epidemiological evidence, forensic science, and the reconstruction of unique, non-repeatable events.

Drawing on the Italian Supreme Court's Franzese judgment and the historical example of the Dreyfus affair, the lecture argues that neither statistical reliability nor mathematical precision can compensate for insufficient evidence concerning the particular case. Scientific evidence requires interpretation, critical examination of its initial premises, and consideration of reasonable alternative explanations.

The principle of proof beyond a reasonable doubt cannot therefore be reduced to a numerical threshold of probability. Rather, it constitutes an epistemological and normative limit on the exercise of judicial power, requiring that criminal responsibility be established through a rationally justified reconstruction of the facts. Ultimately, the relationship between scientific truth and judicial attribution reveals a fundamental concern of the philosophy of law: the protection of the innocent against unjustified conviction.



Prof. Antonio Incampo

University of Bari Aldo Moro

Full Professor of Philosophy of Law in the Department of Law at the University of Bari Aldo Moro. Since 2025, he has served as President of the University of Bari's Board of Guarantors for the Code of Ethics and as a member of the University's Guarantee Commission. Former Director of the Department of Criminal Law, Criminal Procedure, and Philosophy of Law, he is also the former President of the degree programs of the Second Faculty of Law at the University of Bari. He currently serves as Editor-in-Chief of a book series and academic journals in legal philosophy. His scholarly work includes numerous publications on the philosophy and semiotics of legal language, the theory of legal validity and judicial discourse, and the ontology of social reality. In 1998, he was awarded the "Grand Decoration of Honor," conferred by the President of the Republic of Austria in recognition of his contributions to culture.

14:45-15:05 – KEY SPEAKER

Modern criminal justice and psychology – hearing of a witness by videoconference in criminal proceedings

Creating modern criminal justice needs taking into account results on empirical research in such fields as forensic science, psychology and criminology. One of the most important questions regarding the use of videoconference in criminal proceedings is whether this form of communication is equivalent to the one in person when the trial participants are present in the courtroom. This is crucial, especially regarding the evidentiary actions, e.g. hearing of a witness, whether procedures conducted using audio-visual transmission provide evidence that is quantitively and qualitatively comparable to the evidence conducted in a courtroom. In jurisdictions where the principle of immediacy plays an important role, in verifying if the use of the videoconference can ensure – and if yes, under such conditions – the proper standard of proof is the main prerequisite for a wide use of videoconferencing in criminal proceedings.

The presentation delivers results of psychological experiments conducted at the University of Gdańsk. The objective was to compare how the testimony is assessed depending on the way of its presentation (in-person vs. videoconference). The results have important role in designation of provisions regarding use of videoconference in criminal proceedings.



Prof. Sławomir Steinborn

Head of the Department of Criminal Procedure and Criminalistics, Faculty of Law and Administration, University of Gdańsk, Poland

Prof. Dr. Sławomir Steinborn is a professor of Criminal Procedure and European Criminal Law at the University of Gdańsk (Poland), head of the Department of Criminal Procedure Law and Criminalistics at the Faculty of Law and Administration. He did his research in Max Planck Institute for Foreign and International Criminal Law in Freiburg i. Br., Germany: from April 2008 till June 2009 as a fellow of Alexander von Humboldt Foundation and in August 2015 as a fellow of Max Planck Society. Since 2016 he serves as a judge at Court of Appeal in Gdansk, in March 2025 he was appointed President of the Court for a six-year term. In April 2024 he was nominated by the Prime Minister to the Commission of the Criminal Law Codification by the Polish Ministry of Justice (he was also member of this Commission in 2013-2016). He is author and co-author of over 150 scientific publications (in Polish, German and English), as well as author of more than 20 expertise's prepared for the Polish Parliament, Polish Ministry of Justice, Polish Ministry of Foreign Affairs and Council of Europe. He has also been involved in numerous domestic and European research projects. He is member of Polish group of AIDP, member of the Scientific Committee of the AIDP (elected in June 2025) and member of European Criminal Policy Initiative. His fields of interest include criminal law and procedure, international cooperation in criminal matters, European criminal law (esp. harmonisation of criminal law and procedure, judicial cooperation) and criminal aspects of constitutional law.

15:05-15:25 – KEY SPEAKER

Philosophical Perspectives on Contemporary Criminology and Forensic Science: Critical Reflections on Methodology, Values, and Legal Frameworks

Philosophical methods maintain their status as a vital constituent of the scholarly inquiry procedures inherent to criminology and forensic science. The fundamental inquiries of criminology – relating *inter alia* to human nature, the causation of crime, and the development of countermeasures – necessitate comprehensive philosophical consideration. Counterintuitively, the central merit of philosophical reflection's incorporation stems from its speculative quality, which promotes rigorous questioning and encourages the reconsideration of accepted propositions. Philosophical reflection, particularly as it relates to ethics, appears to be an indispensable tool for bridging the findings of research in the natural sciences with those in the social sciences and humanities. Research, encompassing philosophical inquiries, can be conducted from criminology or forensic science to philosophy, and conversely, from philosophy to criminology and forensic science.

Philosophy's underexplored capacity for contributions to criminology and forensic science remains apparent in fields such as, *inter alia*: Ethics and Crime, Cultural Criminology, and Criminal Profiling. Philosophy facilitates an ethical examination of the boundaries of criminological and forensic research, encompassing human rights protection (including values), and aids in delineating the roles and aims of modern criminal sciences.

An essential aspect of philosophical engagement involves receptiveness to a variety of traditions, notably those that emphasize the necessity of incorporating empirical tools. The research concludes that advancements in contemporary criminology and forensics should be characterized by multidirectionality, benefiting from the contributions of natural and social sciences as well as the humanities, particularly contemporary philosophical thinking.



PhD Tomasz Snarski

Department of Substantive Criminal Law and Criminology, Faculty of Law and Administration, University of Gdańsk, Poland

Tomasz Snarski (b. 1985, Gdańsk, Poland) is a Polish lawyer (PhD in Law, advocate), philosopher, poet, publicist and social activist. He is a lecturer (Assistant Professor) at the University of Gdańsk, Department of Substantive Criminal Law and Criminology at the Faculty of Law and Administration. He specializes in criminal law, theory and philosophy of law and human rights. In recent years, he has authored multiple research publications and books. As a researcher, he works inter alia on criminal law, philosophy of law, and human rights. As far as his philosophical concepts are concerned, he is an author of so called Gdansk's theory of human rights and notion of the ideal multicultural law. He stands strongly against the capital punishment and any form of death penalty respectively. In recent years, he has been examining the links between the theory of justice and the axiology of mercy in criminal law. He runs a boutique law firm in the centre of Gdańsk. He is also a member of the Committee on Foreign Affairs of the Supreme Bar Council of Poland, and the official delegate of the Polish Bar in The Council of Bars and Laws Societies of Europe (CCBE). He is a chairman of the International Cooperation and Human Rights Committee of the Pomeranian Bar Association. Additionally he works as a human rights activist. Tomasz is a member of the Scientific Council "L'Ircocervo" (First Italian Digital Journal of Legal Methodology, General Theory of Law and the Doctrine of the State). He maintains an active membership of the International Association for Philosophy of Law and Social Philosophy – Polish IVR Section, Society of Polish Scientist in Lithuania, and Gdańsk Scientific Society.

30 OCTOBER 2026

09:00-09:45 **Discussion Panel**

Human Identification in an Era of Dynamic Social and Civilizational Transformation: Forensic and Legal Perspectives

PANEL MODERATOR

PhD Marcelina Malinowska

Laboratory of Human Genomics and Genetics,
Department of Biology and Medical Genetics, Faculty of Biology, University of Gdańsk

Martyna Czarnomska

Department of Forensic Science, Department of Substantive Criminal Law and Criminology, Faculty of Law and Administration, University of Gdańsk

09:45-10:05 **Poster Session and Science Popularization**

CHAIR OF THE SESSION

PhD Małgorzata Nadolska-Dawidowska

Department of Forensic Science, Department of Substantive Criminal Law and Criminology, Faculty of Law and Administration, University of Gdańsk

10:05-10:45 ***From Satellite to Soil: Integrating Forensic Geoarchaeology, Geophysics, Remote Sensing and AI in the Search for Hidden Evidence.***

PLENARY SPEAKER

Prof. Pier Matteo Barone

American University of Rome

10:45-11:05 ***Beyond the Double Helix: The Past, Present and Future of Forensic DNA Analysis***

KEY SPEAKER

PhD Marcelina Malinowska

Laboratory of Human Genomics and Genetics, Department of Biology and Medical Genetics, Faculty of Biology, University of Gdańsk

11:05-11:25 ***Miniaturization and trends in body fluids analysis for forensic purpose***

KEY SPEAKER

Prof. Renata Wietecha-Posłuszny

Laboratory for Forensic Chemistry, Department of Analytical Chemistry, Faculty of Chemistry, Jagiellonian University in Kraków

11:25-11:45 ***New Directions in DNA-Based Human Identification***

KEY SPEAKER

Prof. Wojciech Branicki

Deputy Director for Scientific Affairs, Institute of Forensic Research in Kraków

11:45-12:05 **Coffee break**

30 OCTOBER 2026

CHAIR OF THE SESSION

PhD Marcelina Malinowska

Laboratory of Human Genomics and Genetics,
Department of Biology and Medical Genetics, Faculty of Biology, University of Gdańsk

12:05-12:45 ***Teaching CSI from the Report Backword***

PLENARY SPEAKER

Andreas Melinato

Head of European Forensic Institute

12:45-13:05 ***Forensic Evaluation of STK Spray for Semen Detection at Crime Scene***

KEY SPEAKER

Anna Barbaro

European Forensic Institute

13:05-13:25 ***Patterns of Firearm-Related Deaths Findings from a 24-year Autopsy-Based Study in the Gdańsk Metropolitan Area***

KEY SPEAKER

PhD Adrian Wrocławski

Department of Forensic Science, Department of Substantive Criminal Law and Criminology, Faculty of Law and Administration, University of Gdańsk, Director of the Criminalistics Museum at the Faculty of Law and Administration

13:25-13:45 ***Interpretation of forensic examination results - the ISO 21043 series of standards***

KEY SPEAKER

Prof. Grzegorz Zadora

Head of the Microtrace Analysis Laboratory, Institute of Forensic Research in Kraków

13:45-14:30 **Lunch Break**

30 OCTOBER 2026

CHAIR OF THE SESSION

Martyna Czarnomska

Department of Forensic Science, Department of Substantive Criminal Law and Criminology, Faculty of Law and Administration, University of Gdańsk

14:30-15:15 ***The Rift between Science and Policy (and how to overcome it)***

PLENARY SPEAKER

Prof. Chris Eskridge

University of Nebraska

15:15-15:35 ***Decoding the Scent of Crime: An AI-Driven Odorant-Binding Protein Biosensor Framework for Source Separation in Forensic Odorology***

KEY SPEAKER

Prof. Sabato D'Auria

Director of Research at the National Research Council of Italy

15:35-15:55 ***Questionable Forensic Practices and Their Consequences: A Real Case Study***

KEY SPEAKER

Prof. Javier Durán

Former Forensic Analyst at the Criminalistics Service (SECRIM) of the Central Judicial Police Body of the Directorate-General of the Civil Guard, Central Operational Unit

15:55-16:15 ***The Forensic Lens: An Urgent Call for Adaptation***

KEY SPEAKER

Sandra Adiarte

European Forensic Institute

16:15-16:35 ***Invisible but Crucial: Contact Traces in Forensic Practice***

KEY SPEAKER

PhD Daria Śmigiel-Kamińska

Department of Forensic Science, Department of Substantive Criminal Law and Criminology, Faculty of Law and Administration, University of Gdańsk

16:45 **Official closing of the conference**

10:05-10:45 – PLENARY SPEAKER

From Satellite to Soil: Integrating Forensic Geo-Archaeology, Geophysics, Remote Sensing and AI in the Search for Hidden Evidence

Forensic investigation increasingly requires interpretation across multiple spatial and temporal scales, from subtle traces within indoor crime scenes to subsurface anomalies and landscape-level patterns. This plenary lecture presents forensic archaeology as a broad interpretative framework for indoor and outdoor crime scenes, supporting the reconstruction of spatial relationships, disturbance, deposition, and sequences of events. Archaeological reasoning is integrated with geophysics, GIS, UAV and satellite remote sensing, and AI-assisted methods to detect, document, and contextualise evidence. Penetrating radar and other non-invasive techniques can rapidly assess the subsurface, while aerial and satellite imagery can support change detection and search prioritisation. These technologies do not replace excavation or expert judgement, but strengthen hypothesis-driven forensic workflows. Drawing on applied experience from clandestine burials, missing-person searches, and complex crime scenes, the lecture highlights validation, uncertainty, chain of custody, and reproducibility, showing how forensic archaeological thinking can make crime-scene interpretation more systematic, transparent, and scientifically defensible.



Prof. Pier Matteo Barone

American University of Rome, Italy

Pier Matteo Barone is Associate Professor of Archaeology at The American University of Rome and a forensic geoarchaeologist specializing in the application of archaeological and geoscientific methods to crime-scene investigation and searches for missing persons. His work integrates forensic archaeology, ground-penetrating radar and other geophysical methods, GIS, UAV and satellite remote sensing, photogrammetry, and digital workflows for the detection, documentation, and interpretation of buried or otherwise concealed evidence. He is Chair of the Forensic Archaeology subgroup within the ENFSI Scene of Crime Working Group and contributes to international research, training, and operational activities in forensic geoscience. His current interests include multimodal data integration, remote sensing for search prioritization, quality assurance in forensic archaeology, and the responsible use of AI-assisted tools in forensic decision support.

10:45-11:05 – KEY SPEAKER

Beyond the Double Helix: The Past, Present and Future of Forensic DNA Analysis

The introduction of DNA profiling in the mid-1980s transformed forensic science by providing an unprecedented tool for human identification and the evaluation of biological evidence. Over four decades, a method based on a limited number of genetic markers has evolved into a sensitive and increasingly information-rich field. Technological advances have improved the speed, resolution, and reliability of DNA profiling, enabling the analysis of smaller, degraded, and more complex biological traces. This lecture will trace the key stages of this evolution and show how emerging technologies have expanded the evidential potential of DNA. Particular attention will be given to the transition from conventional profiling to massively parallel sequencing and genomic and epigenomic approaches. These developments are moving forensic genetics beyond identification towards the inference of biogeographical ancestry, externally visible characteristics, tissue and body-fluid origin, and biological age. Future progress will depend on technological innovation, rigorous validation, transparent interpretation, and responsible application.



PhD Marcelnia Malinowska

**Laboratory of Human Genomics and Genetics, Department of Biology and Medical Genetics, Faculty of Biology,
University of Gdańsk, Poland**

Phd Marcelina Malinowska is an Assistant Professor in the Department of Biology and Medical Genetics at the Faculty of Biology, University of Gdańsk, Poland. She holds a PhD in Biological Sciences and has more than ten years of research experience in human genetics, genomics, and molecular biology. Her research explores novel therapeutic strategies and the genetic and epigenetic mechanisms underlying health and disease. Her scientific interests include genetic and epigenetic profiling, genomic data analysis, and the application of advanced molecular biology techniques in biomedical research. She is also interested in the use of genetic and genomic analyses for diagnostic and human identification purposes.

11:05-11:25 – KEY SPEAKER

Miniaturization and trends in body fluids analysis for forensic purpose

The subject of this presentation is an overview of selected methods of sample preparation and analysis, in particular effective extraction techniques used for the isolation of psychoactive substances from biological materials used in toxicological-forensic analyzes. The process of preparing a sample for analysis is one of the first and critical stages of its analysis, which regardless of further phases of proceeding with the sample, determines the quality and reliability of the results of chemical analysis. This step is often time-consuming and requires the consumption of large quantities of reagents. The innovative such as: solid phase microextraction and miniaturization allow not only to reduce their quantity, but also to perform the analysis using small amounts of the sample, which is often available in limited quantities in forensic analysis.

One of the most important stages in the development of a new analytical method is miniaturization and assessment of the greenness of the method and green metrices. In this case, the White Analytical Chemistry (WAC) concept and ChlorTox Scale, were used to assess the greenness of the method. These methods are reliable and allow you to easily compare the methodologies with each other and compare analytical parameters in a sustainable way.



Prof. Renata Wietecha-Posłuszny

**Laboratory of Forensic Chemistry, Department of Analytical Chemistry, Faculty of Chemistry,
Jagiellonian University in Kraków, Poland**

Prof. Renata Wietecha-Posłuszny, postdoctoral degree, Faculty of Chemistry, Jagiellonian University, Cracow, Poland, specialist in analytical chemistry and forensic toxicology. Head of Forensic Chemistry Specialization at the Faculty of Chemistry, Jagiellonian University, President of the Pro Chemia Foundation, Head of Forensic and Clinical Analysis Team at Faculty of Chemistry, Jagiellonian University. Her scientific interests are focused on developing modern methods dedicated to determination of psychoactive substances and inorganic compounds in various biological matrices by using various analytical methods. Moreover, she deals with the development of innovative analytical methods useful in toxicological and forensic and forensic research. In her research she uses various separation techniques: LC-MS, CE -MS, GC-MS CE-DAD, CE-LIF and spectroscopic: ATR-FTIR, Raman. Her scientific interests are focused on developing modern methods of preparation and analysis of human biological materials, classical and alternative (including VH matrix, bone marrow, hair, etc.), collected ante- and post-mortem, specialist in miniaturization, sensors analysis and green analytical chemistry. She collaborates scientifically, among others, with: Prof. J. Pawliszyn from the University of Waterloo in Canada, Prof. I. Lednev from the State University of New York in Albany, USA, Prof. A. Escarpa from the University of Alcalá, Miniaturization and Analytical Nanotechnology Group, Spain and National Centers, i.e.: Institute of Forensic Research , University of Łódź in the field of: analytical chemistry, green chemistry, miniaturization, innovative toxicological, forensic and clinical research.

11:25-11:45 – KEY SPEAKER

New Directions in DNA-Based Human Identification

Methods for human identification using DNA markers are developing rapidly in multiple directions. One key area is forensic DNA intelligence, which applies DNA-based tools already at the investigative stage. Significant progress has been made in developing DNA-based methods for predicting physical appearance, age, and lifestyle factors, often called Forensic DNA Phenotyping (FDP). The most widely used and validated tool HIrsisPlex-S enables the prediction of pigmentation traits (eye, hair, and skin colour). Progress in the field of forensic epigenetic profiling has delivered robust new tools for accurately estimating age in various tissues and cell types and is developing towards maximal accuracy, also in legal age estimation cases. It has been shown that DNA methylation patterns contain information useful for predicting BMI as well as environmental exposures, including nicotine (smoking) and alcohol consumption. Intensive research is currently focused on predictors of other externally visible characteristics, particularly facial features – which remain the most distinctive identifier in everyday life. These approaches are commonly referred to as the "biological witness". Another highly successful area within forensic DNA intelligence is the analysis of long-range kinship relationships, commonly known as Forensic Investigative Genetic Genealogy (FIGG). This approach involves analyzing many thousands of SNP polymorphisms to determine kinship up to third or even fourth cousins. In addition to laboratory genomic analysis, effective forensic genetic genealogy requires searching public genealogical databases. These are commonly queried via dedicated platform GEDmatch including GEDmatch Pro for law enforcement use. In the process of data interpretation FDP can support FIGG.



Prof. Wojciech Branicki

Deputy Director for Scientific Affairs,
Institute of Forensic Research in Kraków, Poland

Professor Wojciech Branicki is a researcher and lecturer at Jagiellonian University in Kraków and serves as a Vice Director for Science at the Jan Sehn Institute of Forensic Research in Kraków. His research interests focus on the search for new markers and the development of tools useful in the process of human identification, especially on developing DNA-based forensic investigative tools.

His early work advanced the field of forensic DNA phenotyping, particularly the prediction of pigmentation traits. His research then expanded to include other physical appearance characteristics, such as age-related phenotypes as well as epigenetic markers. He made a significant contribution to the development of DNA methylation-based models for age estimation in various tissues. His current projects involve whole-genome sequencing to study facial genetics and lifestyle influences on the human methylome.

12:05-12:45 – PLENARY SPEAKER

Teaching CSI from the Report Backword

Crime scene investigation is commonly taught as a sequence of procedures: observing, searching, collecting, analysing, and reporting. This presentation proposes a conceptual framework for teaching CSI from the report backward. The approach begins with the question that the forensic report must answer and then identifies the propositions, evidence, contextual relations, and investigative decisions required to support a defensible conclusion.

Semiotics provides the central interpretive lens. Traces are treated as signs whose meaning emerges through their location, relationships, possible activities, investigative questions, and representation in photographs, notes, and reports. The framework integrates semiotics with distributed cognition, forensic reconstruction, context management, and authentic assessment.

Particular attention is given to expertise and cognitive bias. Experience can improve task-specific discriminability, especially in distinguishing similar nonmatching fingerprints, but additional years of experience do not necessarily produce proportional performance gains. Other studies show that experienced forensic examiners remain vulnerable to contextual influence and that expertise effects depend on the evidence type and discipline. The presentation therefore distinguishes relevant contextual integration from contextual contamination and context disconnection.

The proposed framework identifies errors at each stage, including detection, interpretation, trace selection, decision criteria, hypothesis formation, and reporting. It also outlines a statistical research framework using mixed-effects models, signal-detection measures, false-alarm and miss rates, confidence calibration, and trace-to-report coherence. The central argument is that CSI education should develop investigators who can show which context mattered, how it shaped their reasoning, and why their final report remains scientifically defensible.



Andreas Melinato

Head of Institution, European Forensic Institute, Malta

Andreas Melinato is a Forensic Engineer, fire and explosion investigator, and Head of Institution at the European Forensic Institute (EFI) in Malta. With more than 25 years of experience, he specialises in forensic engineering, fire and explosion investigation, failure analysis, accident reconstruction, anti-counterfeiting. Expert-witness in Court with extensive professional cooperation with national and international law enforcement agencies, forensic consulting and investigative organisations, magistrates, and professional associations. He is an experienced lecturer in forensic engineering, fire and explosion investigation, forensic light sources, and anti-counterfeiting. He is a past President and Honorary Member of the European Association of Arson Investigators, European Chapter of the International Association of Arson Investigators, Vice-President of the European Association of Crime Analysts, and Associate Member of the ENFSI Fire and Explosion Investigation Working Group.

12:45-13:05 – KEY SPEAKER

Forensic Evaluation of STK Spray for Semen Detection at Crime Scene

In operational forensic contexts, seminal traces are often subjected to environmental degradation, washing, mixtures with other biological or non-biological substances, and general contamination, all of which may compromise detection efficiency and reliability. Rapid and accurate localization of such traces is of critical importance in sexual assault investigations, where biological evidence is often limited, degraded, or partially removed, yet essential for crime scene reconstruction and subsequent DNA profiling.

STK Spray (AXO Science) is a presumptive forensic reagent designed for the rapid and selective detection of semen stains on hard surfaces at crime scenes. The method is based on the detection of acid phosphatase, an enzyme highly concentrated in seminal fluid, producing a visible colorimetric reaction and fluorescence when observed under dedicated forensic light.

This study evaluated the specificity, reliability, and operational performance of STK Spray under controlled simulated forensic conditions, including exposure to multiple potential interferents commonly encountered in real case scenarios and application across different hard surface types.

Results indicate that STK Spray provides consistent and reliable detection of semen traces even in complex simulated environments, maintaining a high level of specificity in the presence of common interfering substances. Its performance supports its applicability as a rapid screening tool in forensic casework, enabling efficient identification of relevant stains and optimizing subsequent sampling strategies for downstream DNA analysis.



Anna Barbaro

European Forensic Institute, Malta

Anna Barbaro holds a European PhD in Forensic Genetics and is affiliated with SIMEF Forensic (Italy), the European Forensic Institute (Malta), and the Instituto Universitario de Investigación en Ciencias Policiales (IUICP), Universidad de Alcalá (UAH), Madrid, Spain. She is President of the Worldwide Association of Women Forensic Experts (WAWFE) and Associate Professor and Researcher in Forensic Biology and Genetics. Her main research areas include forensic DNA analysis and genetics, DNA recovery from challenging samples, and the development and application of innovative technologies in forensic science. She supervises doctoral, Master's, and undergraduate theses and is the author of more than 200 scientific papers and conference presentations, as well as five forensic manuals.

13:05-13:25 – KEY SPEAKER

Patterns of Firearm-Related Deaths: Findings from a 24-Year Autopsy-Based Study in the Gdansk Metropolitan Area

Firearm mortality is uncommon in Poland, yet its rarity makes the interpretation of fatal gunshot injuries particularly dependent on long-term regional evidence. This presentation uses a complete series of medico-legal autopsies from the Gdansk metropolitan area (1998-2021) to examine how the profile of firearm death changed during a period of major social, economic, and institutional transformation. Rather than treating firearm fatalities as a single category, the analysis contrasts the trajectories and injury patterns of suicide and homicide. The material reveals a shift from interpersonal to self-directed firearm violence: homicides declined, while suicides became increasingly prominent. These trends occurred despite growth in the number of legally held firearms, suggesting that firearm availability alone does not explain local mortality patterns. Autopsy findings also demonstrate that manner of death is reflected in combinations of variables rather than in any isolated feature. Suicides were typically associated with a single close-range handgun wound to the head, whereas homicides more often involved multiple wounds, shots from a distance, and injuries to the chest or less typical cranial locations. At the same time, substantial overlap between these patterns cautions against formulaic classification. The study therefore highlights the value of integrating autopsy findings with scene, investigative, legal, and socioeconomic evidence when reconstructing firearm-related deaths.rapid screening tool in forensic casework, enabling efficient identification of relevant stains and optimizing subsequent sampling strategies for downstream DNA analysis.



PhD Adrian Wrocławski

Department of Forensic Science, Department of Substantive Criminal Law and Criminology, Faculty of Law and Administration, University of Gdańsk,
Director of the Criminalistics Museum at the Faculty of Law and Administration, Poland

Dr. Adrian Wrocławski is a lawyer, an Assistant Professor in the Department of Forensic Research at the Faculty of Law and Administration at the University of Gdańsk, and the Director of the Museum of Criminalistics. In his legal practice, he specializes in criminal law and fiscal penal law, providing legal counsel to both individuals and business entities. He also serves as a court-appointed expert in firearms and ballistics for the Regional Court in Gdańsk. His academic work focuses on serial homicide, the use of dangerous objects, ballistics, and forensic medicine. He is the author of a monograph dedicated to the case of Paweł Tuchlin (known as "Scorpion"). He has appeared as an expert on British and Polish documentary series, such as "World's Most Evil Killers" and "Kryminalne śledztwa PRL", and co-developed the "Virtual Crime Scene" VR application for crime-scene investigation training in collaboration with Asseco Data Systems.

13:25-13:45 – KEY SPEAKER

Interpretation of forensic examination results - the ISO 21043 series of standards

At present, analytical laboratories performing examinations for the purposes of the judiciary and law enforcement authorities are accredited mainly for compliance with PN-EN ISO/IEC 17025:2018-02. However, this standard does not cover all aspects that are important from the perspective of forensic science, such as methods for interpreting examination results. For this reason, representatives of forensic laboratories, acting under the auspices of the International Organization for Standardization, developed the ISO 21043 series of technical standards consists of five parts, dedicated to forensic processes. The presentation will discuss the content of these standards, with particular emphasis on Part 4, which is devoted to the interpretation of examination results.

In this document, the leading approach to the interpretation of evidence when considering alternative propositions regarding an event (e.g. H_1: the compared samples originate from the same object; H_2: the compared samples originate from different objects) is the likelihood ratio (LR) approach. The value $LR = Pr(E|H_1)/Pr(E|H_2)$ makes it possible to express the role of the expert by assessing the strength of the evidence in the context of competing propositions. It is assumed that the greater the LR value is above 1 (or the further it is below, the stronger the support is for proposition H_1 (or H_2), respectively. Thus, the estimated LR value indicates not only which of the propositions is better supported by the obtained data (E), but also quantitatively determines the strength of that support. Detailed information on the practical use of LR is presented, among others, in publications and, which are also cited in Part 4 of ISO 21043 as supplementary literature.



Prof. Grzegorz Zadora

Head of the Microtrace Analysis Laboratory,
Institute of Forensic Research in Kraków, Poland

Professor Grzegorz Zadora scientific and professional career has been devoted to forensic chemistry, mainly at the Jan Sehn Institute of Forensic Research in Kraków, where he has worked since 2001 and currently holds the position of professor. Since 2005, he has served as an expert in physicochemical analysis of microtraces, and since 2013 also in bloodstain pattern analysis. He is also a part-time professor at the Institute of Chemistry, University of Silesia in Katowice, where he co-developed the forensic chemistry specialization.

His research focuses on the interpretation of forensic data for the justice system and law enforcement, particularly using likelihood ratio methods. He has authored over 50 impact-factor journal articles, more than 40 book chapters, and co-authored a Wiley monograph on LR models, now recommended in the ISO 21043 standard series. Professor Zadora has been included in the Stanford/Elsevier World's Top 2% Scientists ranking.

14:30-15:15 – PLENARY SPEAKER

Thoughts on the Historic Rift Between Science and Policy (And How to Overcome it)

Science's impact on public policy (and more particularly the impact of the social sciences) has generally been time-lagged via the "classroom and wait" model. We have indeed advanced historically one death at a time. The challenge before us as criminologists is to enhance our present-tense public policy impact. As Abraham Lincoln noted in this context so many years ago, public sentiment is everything. I believe that science, communicated clearly, strategically, and pragmatically as per above, can have a more salient and significant present-tense influence on public sentiment and subsequently upon policy than it has in the past. We can overcome the heretofore persistent and vexing science to policy implementation rift, and it will be to the betterment of our world.



Prof. Chris Eskridge

University of Nebraska, USA

Chris Eskridge currently serves as a Professor in the School of Criminology and Criminal Justice at the University of Nebraska. He took his Ph.D. in public administration from Ohio State University in 1978. Prior to his appointment to the faculty at the University of Nebraska in that same year, he worked in the Economic Crime Unit of the Utah Attorney General's Office, as a Legislative Aide in the Utah House of Representatives, and as an Investigator in the Utah County Attorney's Office. He also worked in the area of private security and university security, and served as the Assistant to the President of the Lincoln Foundation. He served de-facto and then officially as the Director of the American Society of Criminology for some four + decades. He has authored/edited four books, given hundreds of professional presentations in numerous international settings and locations, and has 80+ publications. He has served as a Fulbright Scholar/Visiting Professor of Law at Silliman University in the Philippines, as a Fellow/Visiting Professor of Sociology at the University of Canterbury in New Zealand, and as a Research Associate at the U.S. Air Force War College (Maxwell AFB, Alabama). He has also received a number of teaching awards. Professor Eskridge currently serves as the General Editor of the Journal of Contemporary Criminal Justice, and as a member of the editorial/advisory board of nine international journals. He also serves on the Program Council of the International Centre of Criminological Research and Expertise. He served as a delegate to the United Nations Economic and Social Council for many years, and was affiliated with the University of Nebraska Athletic Department's Strength and Conditioning Program for 45 years. He holds three honorary positions: Research Professor of Law at the University of Central Venezuela in Caracas, Professor of Law at San Martin de Porres University in Lima, Peru, and Honorary Professor of Criminology, Grigol Robakidze University in Tbilisi, Republic of Georgia.

15:15-15:35 – KEY SPEAKER

Decoding the Scent of Crime: An AI-Driven Odorant-Binding Protein Biosensor Framework for Source Separation in Forensic Odorology

Traditional forensic odorology heavily relies on canine scent tracking or complex laboratory-based Gas Chromatography-Mass Spectrometry (GC-MS). While effective, these methods face significant challenges regarding objective digital quantification and the chaotic overlap of volatile organic compounds (VOCs) at complex crime scenes. Here, we introduce an advanced bio-informatics framework that exploits engineered Odorant-Binding Protein (OBP) arrays combined with Deep Learning architectures to model, digitalize, and deconvolute real-time chemical signatures at crime scenes. By utilizing a high-density matrix of mutagenized OBPs, the system records a comprehensive digital "scent fingerprint" of the environment.

The core innovation lies in the subsequent artificial intelligence pipeline, which deploys customized Recurrent Neural Networks (RNNs) and chemical transformers for source separation. The AI successfully segregates the massive, time-dependent chemical noise of human decomposition (thanato-chemistry/ necro-VOCs) from the subtle, exogenous biometric signatures left behind by a perpetrator (MHC-regulated sweat profiles, cosmetics, odorant food traces, bacterial odorant traces and contraband traces).

The goal is to demonstrate that this automated deconvolution not only refines the estimation of the post-mortem interval (PMI) but also isolates a distinct, legally reproducible chemical profile of the suspect. This integration of biotechnology and machine learning bridges the gap between biological sensitivity and objective digital forensics, establishing a new paradigm for automated crime scene reconstruction.



Prof. Sabato D'Auria

Director of Research at the National Research Council of Italy

Prof. Sabato D'Auria is a Director of Research at the National Research Council of Italy (CNR). He served as the Director of the Institute of Food Science (ISA-CNR) in Avellino from October 2014 to January 2021, and the CNR Department of Biology, Agriculture, and Food Science (CNR-DiSBA) in Rome until 2025 coordinating the activities of nine CNR Institutes across Italy, overseeing more than 900 researchers, technologists, and technical-administrative staff.

He is author of about 300 papers. He is also the inventor of multiple national and international patents in the field of biosensors. Dr. D'Auria has been responsible for many national and international research projects.

Actually, he leads the Laboratory for Molecular Sensing at ISA-CNR. His main scientific interests are related to the identification and characterization of novel biomolecules to use as stable and specific probes for the design of advanced biosensors.

15:35-15:55 – KEY SPEAKER

Questionable Forensic Practices and Their Consequences: A Real Case Study

The real-life case I am presenting shocked Spanish society because of how horrific and inexplicable it was, having taken place in a well-known, albeit quiet, village in southern Spain. After two years of investigation, no leads were found that would lead to the solving of the crime. Subsequent DNA test results linked a person to the crime scene, and from that moment on, alleged evidence began to emerge that had not been considered throughout the police investigation. Forensic experts and investigators were hired, and they found alleged evidence against him. Relying on my recognized judgement and standing, they sent me all these reports so that I could review them and give my opinion.

Everything had been poorly executed and managed.

I undertook to defend the accused, preparing the necessary reports to demonstrate that the evidence presented was incorrect, covering various aspects of criminalistics and forensic science. I was going to be on my own against several experts, but I took up the challenge. The trial against the defendant was to be held before a jury court – one of the most complex types of court under Spanish law – and he faced a potential sentence of over forty years' imprisonment for murder. During the oral phase of the trial, one by one, all the reports that sought to implicate the defendant were dismissed. They had tried to fabricate a murderer out of someone who was not one.

The outcome was that the defendant was found not guilty. When I began my studies at the Faculty of Physical Sciences, with a view to specializing in Forensic Science, I believed that science should be used to combat crime and should not always be employed to incriminate and convict but should also be at the service of those who are innocent and need to prove it. Science is not in the hands of a mad scientist, as we see in some films, who uses it to do evil; quite the opposite: forensic science is in the service of good.



Prof. Javier Durán

Former Forensic Analyst at the Criminalistics Service (SECRIM) of the Central Judicial Police Body of the Directorate-General of the Civil Guard, Central Operational Unit, Spain

Former Forensic Analyst at the Spanish Criminalistics Service (SECRIM), specialising in forensic analysis, crime scene investigation and disaster victim identification. Former investigator at the Central Judicial Police Authority and United Nations trainer in security and conflict resolution. Criminologist, criminal investigator and media analyst for major Spanish broadcasters. Holds a Bachelor's degree in Criminology and Security Sciences and a Master's degree in Criminal Profiling and Crime Analysis. Accredited Security Director and expert in critical infrastructure security.

University lecturer in Criminology, Forensic Science and Security. Founding member of the College of Criminology of the Community of Madrid and active member of several international police and security associations. Recipient of numerous national and international honours. Author of academic publications and teaching materials, and speaker at national and international conferences.

15:55-16:15 – KEY SPEAKER

The Forensic Lens: An Urgent Call for Adaptation

As societies confront complex forms of violence, coercion, misinformation, and technologically mediated harm, forensic disciplines face growing pressure to adapt their methods of observation, interpretation, and analysis. This paper explores the theory and practice of forensic nursing as a distinctive forensic discipline that broadens conventional approaches to evidence recognition and assessment. Unlike automated pattern-recognition systems, which rely on predefined variables and statistical associations, forensic nursing applies standards-based forensic assessment through the integration of clinical expertise, contextual interpretation, victim-centered observation, and evidential documentation.

It is argued that evidence exists not only in measurable patterns but also in human presentation, behavior, injury interpretation, disclosure, and environmental context. Through a caregiving framework, practitioners are often positioned to identify subtle indicators of violence, exploitation, coercion, and victimization that may not be immediately apparent through automated analytical methods alone. This approach reinforces the importance of professional judgment within established forensic standards and evidentiary frameworks, beyond professional and personal biases.

In an era characterized by hybrid threats that blur traditional distinctions between criminal, social, digital, and interpersonal harms, the ability to recognize, document, and interpret complex evidence becomes increasingly important. The paper argues that forensic practitioners, criminologists, analysts, and law enforcement professionals bear a critical responsibility to actively observe, assess, and communicate findings. The future of forensic science depends not only on technological innovation but also on preserving the human capacity to see, interpret, and contextualize evidence within rigorous forensic practice.



Sandra Adiarte

European Forensic Institute, Malta

Sandra is an internationally trained specialist for structured movement analysis (Laban Movement Analysis, Kestenberg Movement Profile ®) and the analysis of video footage in a forensic context. After a professional career in dance and pedagogy, she started her academic dive into psychology, dance and movement therapy and the behavioural sciences.

Currently, Sandra is enrolled as a PhD candidate at the Tactical Research Unit in Health Sciences and Medicine with Bond University, Australia. She investigates the practices of behaviour observation and threat assessment via human observers. Her research and lectures apply interdisciplinary and mixed-method approaches for the training of security, law enforcement, and military personnel with the aim of supporting trainees and professionals in health care and security management through practice-based and field-oriented research.

16:15-16:35 – KEY SPEAKER

Invisible but Crucial: Contact Traces in Forensic Practice

Crime scene examination forms the foundation of every forensic investigation. The proper identification, documentation, and interpretation of physical evidence at the scene are essential for reconstructing the sequence of events and establishing links between individuals, objects, and locations. Even the smallest contact traces-often invisible to the naked eye-can provide vital information for the investigative process.

This presentation discusses the crime scene examination process, with particular emphasis on the detection and preservation of various categories of contact traces, including fingerprints, biological evidence, and trace evidence.

An overview of modern laboratory methods used to analyze contact traces will also be presented. The complementary roles of fingerprint examination, DNA profiling, and instrumental analytical techniques will be discussed, demonstrating how multidisciplinary forensic approaches enhance the evidentiary value of physical traces and support the reconstruction of criminal events. The presentation emphasizes that the effectiveness of a forensic investigation relies on the combination of meticulous crime scene examination, proper evidence handling, and advanced laboratory analyses, all of which contribute to reliable and scientifically sound forensic conclusions.



PhD Daria Śmigiel-Kamińska

Department of Forensic Science, Department of Substantive Criminal Law and Criminology, Faculty of Law and Administration, University of Gdańsk, Poland

PhD Daria Śmigiel-Kamińska is a graduate of the University of Gdańsk and a forensic expert in the Chemistry Department of the Central Forensic Laboratory of the Police. Areas of expertise include forensic chemistry, with particular emphasis on narcotics and trace evidence analysis.

Scientific activities include authorship and co-authorship of publications in forensic chemistry, particularly on the examination and identification of textile fibers and the application of instrumental analytical methods to forensic evidence. Active involvement in national and international scientific and expert cooperation includes participation in the activities and meetings of the European Network of Forensic Science Institutes (ENFSI). Professional experience combines extensive practical expertise in forensic casework with scientific research and teaching.

Poster session

Orphines: Emerging Illicit Synthetic Opioids Pharmacological Profile, Identification, Management, Public Health Implications

Orphines represent an emerging subclass of novel synthetic opioids (NSOs) characterized by a piperidine benzimidazolone (or benzimidazol-2-one) core, acting as full agonists at the mu-opioid receptor (MOR) with potencies approximately ten times greater than fentanyl. The proliferation of these compounds in the illicit drug market originated in China and accelerated as a substitution strategy following China's July 2025 core-structure scheduling of nitazenes. Orphines are distributed globally across North America, Europe, and parts of Oceania, primarily taking the form of white, beige, or brown powders, rock-like crystals, LSD blotters, nasal sprays, e-cigarette liquids, and counterfeit tablets deceptively marketed as alprazolam (Xanax), oxycodone (OxyContin), or Dilaudid. The European impact is heavily concentrated in Estonia and Latvia, with detections expanding across numerous other European nations, while the epidemic has also spread across the United States, Canada, Australia, and Norway. The public health threat is compounded because these substances are frequently adulterated with other illicit drugs, including fentanyl, heroin, nitazenes, cocaine, methamphetamine, designer benzodiazepines, medetomidine, and xylazine. Forensic detection is highly complicated as orphines fail to trigger positive results on standard hospital immunoassay drug screens, routine opioid urine tests, or conventional fentanyl and nitazene field test strips. Reliable identification strictly relies on advanced analytical instrumentation, specifically gas chromatography, liquid and high-resolution mass spectrometry, and nuclear magnetic resonance (NMR). Clinical management requires first responders and clinicians to cautiously administer repeated doses of naloxone every 2-3 minutes until a response is achieved to mitigate potential sudden withdrawal syndrome, often necessitating hospital care for medically supervised administration. Standard medical care for concurrent xylazine-induced ulcers involves the removal of necrotic tissue and the application of moist, non-adherent dressings. The use of orphines is concentrated among middle-aged men with extensive histories of opioid dependence and incarceration, as well as individuals in under-resourced rural communities. Effective public health and harm reduction responses must prioritize comprehensive access to naloxone alongside drug-checking services, syringe exchange programs, medication-assisted treatment for opioid use disorders, and early warning surveillance systems.

Medical Doctor, Julia Lassmann

Department of Forensic Medicine at Medical University of Gdańsk, Poland

Exploring the Intersection of Law and Technology in the Prosecution and Prevention of Human Trafficking in the Digital Era

Emerging technologies have significantly changed the process of trafficking in persons across physical borders. While the legal definition remains grounded in the Protocol to Prevent, Suppress and Punish Trafficking in Persons, Especially Women and Children (Palermo Protocol, 2000), the rapid development and adoption of digital technologies into trafficking operations present new challenges and opportunities for law enforcement agencies and legal systems. This research examines how digital technologies have transformed the mechanisms of human trafficking and explores the potential of AI tools to support investigation and prosecution efforts by adopting a dual approach combining legal analysis and a practical demonstration case. The first part analyses the international and European legal frameworks governing trafficking in persons, focusing on jurisdictional challenges, criminal liability, data protection and digital regulation in cyberspace. Thesecond part assesses the investigative potential of AI-enabled tools through a demonstration case conducted using the Octostar platform on a synthetic dataset modelled on realistic human trafficking scenarios. The findings demonstrate that AI can significantly accelerate the review of large datasets, the identification of hidden relationships, the reconstruction of trafficking networks and the generation of evidential leads capable of supporting prosecutorial decision-making. However, the research also highlights important legal and ethical considerations related to privacy, transparency, accountability and compliance with European data protection and AI regulations. This research concludes that although digital technologies have increased the complexity and transnational nature of human trafficking, AI-assisted investigative tools can provide valuable support to law enforcement authorities when deployed within appropriate legal safeguards. Strengthening international cooperation, adapting jurisdictional frameworks and ensuring responsible AI governance will be essential to combat technology-facilitated trafficking and to safeguard the rights and dignity of every person it seeks to protect.

BSc (Hons) Gaia Milesi

European Forensic Institute, Octostar

Investigating the Forensic Features of Signature Simulation and Self-Disguise: An Experimental Comparative Study

Ehis Study presents an experimental comparative investigation of the features that discriminate between genuine signature, self-disguised signatures, and simulated forgeries, across ten writers with diverse signature styles. A corpus of 700 ink-on-paper specimens was examined: 200 genuine signatures (20 per writer), 50 self-disguised signatures (5 per writer), and 450 simulated forgeries produced under a cross-forgery design in which each writer forged the signatures of all nine other participants.

Specimens were examined directly using stereo microscopic analysis combined with feature-based qualitative forensic comparison, in accordance with the ENFHEX Best Practice Manual (2019). Twenty graphic features were evaluated per specimen, including fluency, internal rhythm, line quality, pen lift count, retracing, slant, size, connectivity, and capital letterform morphology.

Results confirm that dynamic execution features (fluency, internal rhythm, and line quality) are retained in self-disguised specimens despite radical structural modification and diverge universally in simulated forgeries regardless of forger skill level. Crucially, this study also addresses a question underexplored in the existing literature: given that a signature is non-genuine, which feature patterns indicate disguise rather than forgery?

The findings suggest that the co-occurrence of structural alteration with preserved dynamic automaticity constitutes the primary indicator of disguise, while isolated dynamic disruption, without structural correspondence to the writer's genuine profile, is more consistent with forgery. The implications for forensic casework and future research directions are discussed.

BSc (Hons) Nicole Sicoli

European Forensic Institute, Malta

Ballistic Soft Tissue Simulants in Gunshot Reconstruction: Capabilities, Limitations and Evidentiary Value of Experimental Research

Background: Ballistic soft-tissue simulants are widely used to visualize projectile penetration and associated cavity formation. However, their ability to reproduce the complex responses of biological tissues remains limited.

Objective: This presentation examines the forensic value and limitations of experiments performed with synthetic and animal ballistic gelatin for reconstructing gunshot events.

Methods: The analysis draws on previously published comparative research involving synthetic and animal ballistic gelatin, as well as experimental investigations of temporary cavity formation. Particular attention is given to the interpretation of temporary cavities, permanent penetration tracks, material-dependent responses and the limitations of extrapolating experimental findings to actual gunshot injuries.

Results: Previous experiments demonstrated that both simulants enable visualization of projectile penetration phenomena, although differences were observed in the representation of wound-related characteristics. These differences are relevant to forensic reconstruction, particularly when experimental observations are used to infer mechanisms of tissue damage.

Conclusions: Ballistic gelatin provides a valuable experimental model for forensic investigations, but its results require cautious interpretation. The evidentiary value of such experiments depends on methodological transparency, reproducibility and explicit recognition of the limitations of tissue simulants. A structured approach to documenting experimental conditions and interpretative uncertainty is proposed to support reliable forensic conclusions.

Prof. Karolina Julia Helnarska
WSB Merito University in Poznań, Poland

PhD Grzegorz Motrycz
WSB Merito University in Poznań, Poland

On the trail of new materials: Exploring collagen-based hydrogel platforms for latent fingerprint and touch DNA analysis

This research was funded in full by National Science Centre, Poland 2025/57/B/NZ1/03811

The development of new functional materials offers new possibilities for forensic trace analysis. Within our research, attention has been given to hydrogel matrices as integrated platforms for the collection, visualization, and preservation of latent fingerprints and touch DNA. From a materials engineering perspective, key requirements include suitable optical properties, flexibility, stability under ambient conditions, and low toxicity. Collagen, as a natural and biocompatible polymer capable of forming transparent hydrogels, represents a promising candidate for the proposed application.

The study focused on collagen-based hydrogels with incorporated fluorescent dyes: 1,8-diazafluoren-9-one was used for amino acid-based visualization of fingerprint ridge patterns, while Acridine Orange or Midori Green Advance or Diamond™ Nucleic Acid Dye for DNA visualization. The hydrogel matrices, composed of collagen and sodium alginate, were prepared by conventional casting or extrusion-based 3D printing and crosslinked with $CaCl_2$. Their physicochemical and optical properties were characterized, with particular attention to the mutual effects of the hydrogel matrices and the incorporated dyes. The results provide a basis for the further development of collagen-based hydrogels as a multifunctional platform for latent fingerprint and DNA analysis, with the potential to make a significant contribution to forensic science and trace analysis.

PhD Magdalena Nadolska-Dawidowska
Department of Forensic Science, Faculty of Law and Administration, University of Gdańsk, Poland

MSc Maria Caterina Evangelisti
Department of Science and Engineering of Matter, Environment and Urban Planning (SIMAU), Università Politecnica delle Marche, Ancona, Italy

PhD Marcelina Malinowska
Department of Medical Biology and Genetics, Faculty of Biology, University of Gdańsk, Poland

MSc Martyna Kuczyńska
Department of Medical Biology and Genetics, Faculty of Biology, University of Gdańsk, Poland

PhD Paolo Moretti
Department of Life and Environmental Sciences, Università Politecnica delle Marche, Ancona, Italy

Prof. Francesca Luzi
Department of Life and Environmental Sciences, Università Politecnica delle Marche, Ancona, Italy

Prof. Alida Mazzoli
Department of Life and Environmental Sciences, Università Politecnica delle Marche, Ancona, Italy

Prof. Aneta Lewkowicz
Department of Forensic Science, Faculty of Law and Administration, University of Gdańsk, Poland

Printing the evidence: 3D-bioprinted hydrogels as tissue models for forensic science

Forensic investigations increasingly rely on physical models to test hypotheses, reconstruct events and explain findings to non-specialists. Conventional tissue simulants, such as cast gelatin blocks, soap or silicone, are homogeneous and difficult to shape into realistic anatomy. This contribution explores how extrusion-based 3D bioprinting of three natural biomaterials (sodium alginate, collagen and gelatin) could provide anatomically shaped, layered and reproducible soft-tissue analogues for forensic use. Alginate offers fast, mild ionic crosslinking and high shape fidelity, and is already familiar to forensic odontology as an impression material. Collagen, the main protein of the dermis, provides a fibrillar network close to native skin. Gelatin is the established reference simulant in wound ballistics, and when printed it can be given internal structure and stabilised by crosslinking. Starting from CT/MRI data, post-mortem imaging or 3D surface scans, digital models can be segmented, sliced and printed with tailored bioinks, then combined with 3D-printed bone. Potential applications include wound ballistics and trauma reconstruction, sharp- and blunt-force injury testing, bloodstain pattern analysis, patterned injuries and bite marks, trace and DNA recovery studies, training, and courtroom demonstration.

By translating digital case data into realistic and repeatable physical models, 3D-bioprinted hydrogels could become a bridge between the laboratory, the investigation and the courtroom, and a new interdisciplinary tool for evidence-based forensic reconstruction.

MSc Maria Caterina Evangelisti

Department of Science and Engineering of Matter, Environment and Urban Planning (SIMAU), Università Politecnica delle Marche, Ancona, Italy

Prof. Francesca Luzi

Department of Science and Engineering of Matter, Environment and Urban Planning (SIMAU), Università Politecnica delle Marche, Ancona, Italy

Prof. Alida Mazzoli

Department of Science and Engineering of Matter, Environment and Urban Planning (SIMAU), Università Politecnica delle Marche, Ancona, Italy

The identification of victims of mass incidents and disasters – as an interdisciplinary issue

This research was funded in part by National Science Centre, Poland 2025/57/B/NZ1/03811

The identification of victims of mass disasters poses a challenge for modern forensic science and forensic medicine. It is also an issue that must be considered from the perspective of legal regulations (particularly those relating to human rights). This research presents a selection of the most important legal instruments and regulations of the European Convention on Human Rights that should be respected during DVI identification procedures in relation to the protection of human rights. Selected judgments of the European Court of Human Rights are also presented, in which violations of these provisions were found in the course of actions taken to identify victims of mass disasters in specific cases. In this context, the need to develop an effective model of cooperation, as well as zamiast and consistent procedures and methods that would fully respect human rights during the identification of victims of mass incidents was also emphasized.

PhD Joanna Koczur

Institute of Legal Sciences, Faculty of Law and Administration, University of Silesia

MSc Martyna Czarnomska

Department of Forensic Science, Department of Substantive Criminal Law and Criminology, Faculty of Law and Administration, University of Gdańsk

Prof. Aneta Lewkowicz

Department of Forensic Science, Faculty of Law and Administration, University of Gdańsk, Poland

Fluorescent Visualization of DNA in Fingerprint Traces

This research was funded in full by National Science Centre, Poland 2025/57/B/NZ1/03811

Latent fingerprints represent complex biological traces containing cellular material, extracellular matter and nucleic acids of diverse origin. Their molecular composition may therefore provide information extending beyond conventional ridge-pattern examination.

This study aimed to evaluate whether fluorescent nucleic acid dyes with different binding properties can support the characterization of biological material present in fingerprint deposits. Acridine Orange, Hoechst 33342, MIDORI Green, PicoGreen, SYBR Green and Diamond™ Nucleic Acid Dye were selected based on their binding mechanisms, selectivity, spectral properties and potential forensic limitations. Their performance was evaluated using fluorescence microscopy to examine signal distribution, morphology, and spatial colocalization, while spectrofluorometric measurements were used to characterize the spectral properties of dye-fingerprint systems.

The tested markers showed potential for visualizing DNA-associated components within fingerprint residues. Their fluorescence characteristics suggest that these dyes could complement existing fingerprint visualization methods or serve as alternative fluorescent markers in selected forensic applications.

MSc Martyna Kuczyńska

Department of Medical Biology and Genetics, Faculty of Biology, University of Gdańsk, Poland

PhD Marcelina Malinowska

Department of Medical Biology and Genetics, Faculty of Biology, University of Gdańsk, Poland

Prof. Aneta Lewkowicz

Department of Forensic Science, Faculty of Law and Administration, University of Gdańsk, Poland

When Fibers Tell a Story: The Forensic Significance of Degradation in Polyamide and Acrylic Fibers

Textile fibers are valuable trace evidence in forensic investigations, potentially linking suspects, victims, and crime scenes. However, their evidential significance extends beyond conventional identification and comparison. Changes resulting from environmental exposure, chemical treatment, or thermal damage may provide additional information about the circumstances of a criminal event.

This presentation focuses on the forensic interpretation of degradation-induced changes in polyamide (PA) and acrylic (PAN-based) fibers, with particular emphasis on documented case evidence and experimental studies relevant to forensic practice. One reported homicide case involving arson demonstrated how the examination of thermally damaged polyamide 6,6 fabric could help reconstruct exposure conditions. The observed melting characteristics indicated possible contact with a surface heated to at least 250°C. Additional experimental investigations have shown that degradation-related changes in fiber morphology, optical properties, and chemical composition can provide useful discriminating characteristics. Studies involving fluorescence analysis have also demonstrated that detergent residues retained on nylon and acrylic fibers may enhance their differentiation during forensic comparisons.

These findings illustrate how microscopic examination, spectroscopic methods, and thermal analysis can support the interpretation of altered textile evidence. Nevertheless, similar degradation patterns may arise from different exposure conditions, and changes caused by routine textile use must be distinguished from those potentially associated with criminal activity.

The forensic examination of degraded fibers should therefore extend beyond establishing their chemical identity. When evaluated alongside contextual evidence and supported by complementary analytical techniques, degradation characteristics may contribute to reconstructing events, assessing alternative explanations, and strengthening the interpretation of textile trace evidence.

PhD Aleksandra Zahorska

Division of Didactics and Popular Science, Faculty of Chemistry, University of Gdańsk

PhD Anna Topolewska

Division of Didactics and Popular Science, Faculty of Chemistry, University of Gdańsk

PhD Daria Śmigiel-Kamińska

Department of Forensic Science, Department of Substantive Criminal Law and Criminology, Faculty of Law and Administration, University of Gdańsk, Poland

Prof. Jolanta Kumirska

Division of Didactics and Popular Science, Faculty of Chemistry, University of Gdańsk

Incest as a crime under the Polish Penal Code of 1997

The paper titled “Incest as a crime under the Polish Penal Code of 1997” characterizes the offense of incest within the framework of Polish criminal law. The author examines the rationale behind the criminal prohibition of incest in the 1997 Penal Code. This issue is explored in the context of current regulations, while also taking into account the legal and historical background, as well as the views of scholars in the field of Polish criminal law. The author concludes by arguing-as a *de lege ferenda* proposal-that the Penal Code requires amendment with regard to the provisions concerning the criminalization of incest.

PhD Paweł Petasz

Assistant professor of Faculty of Law and Administration, University of Gdańsk, Poland

Panelists



Prof. Aneta Lewkowicz
Chair of the ICCFS-PT
Head of the Department of Forensic Science, Department of Substantive Criminal Law and Criminology, Faculty of Law and Administration, University of Gdańsk



Małgorzata Oliwia Sobczak
A writer, professionally a cultural expert and journalist, Poland



Prof. Piotr Chomczyński
Department of Sociology of Art, University of Łódź



Prof. Wojciech Branicki
Deputy Director for Scientific Affairs, Institute of Forensic Research in Kraków



Prof. Sabato D'Auria
Director of Research at the National Research Council of Italy



Prof. Pier Matteo Barone
American University of Rome



Andreas Melinato
Head of Institution,
European Forensic Institute, Malta



Prof. Piotr Bojarski
Head of Biomaterials and Medical Physics Division Faculty of Mathematics, Physics and Informatics
University of Gdańsk
Member of University Council
Member of National Science Center Council



Prof. Joanna Bednarz
Head of the Department of International Business, Faculty of Economics, University of Gdańsk

Panel moderators



PhD Marcelnia Malinowska
Laboratory of Human Genomics and Genetics, Department of Biology and Medical Genetics, Faculty of Biology, University of Gdańsk



Martyna Czarnomska
Conference Coordinator,
Department of Forensic Science, Department of Substantive Criminal Law and Criminology, Faculty of Law and Administration, University of Gdańsk

Scientific Committee



Prof. Aneta Lewkowicz
Chair of the ICCFS-PT
Head of the Department of Forensic Science, Department of Substantive Criminal Law and Criminology, Faculty of Law and Administration, University of Gdańsk



Prof. Wojciech Zalewski
Dean of the Faculty of Law and Administration, University of Gdańsk, Head of the Department of Substantive Criminal Law and Criminology, Faculty of Law and Administration, University of Gdańsk



Prof. Michał Kaliszan
Head of the Department of Forensic Medicine, Faculty of Medicine, Medical University of Gdańsk



Andreas Melinato
Head of Institution,
European Forensic Institute, Malta



Prof. Sabato D'Auria
Director of Research at the National Research Council of Italy



Prof. Dariusz Zuba
Director of the Institute of Forensic Research in Kraków



PhD Marcelnia Malinowska
Laboratory of Human Genomics and Genetics, Department of Biology and Medical Genetics, Faculty of Biology, University of Gdańsk



PhD Daria Śmigiel-Kamińska
Department of Forensic Science, Department of Substantive Criminal Law and Criminology, Faculty of Law and Administration, University of Gdańsk



PhD Adrian Wrocławski
Department of Forensic Science, Department of Substantive Criminal Law and Criminology, Faculty of Law and Administration, University of Gdańsk, Director of the Criminalistics Museum at the Faculty of Law and Administration



Prof. Sławomir Steinborn
Head of the Department of Criminal Procedural Law and Criminology, Faculty of Law and Administration, University of Gdańsk

Organizing Committee



Prof. Aneta Lewkowicz
Chair of the ICCFS-PT
Head of the Department of Forensic Science, Department of Substantive Criminal Law and Criminology, Faculty of Law and Administration, University of Gdańsk



Prof. Wojciech Zalewski
Dean of the Faculty of Law and Administration, University of Gdańsk, Head of the Department of Substantive Criminal Law and Criminology, Faculty of Law and Administration, University of Gdańsk



Prof. Michał Kaliszan
Head of the Department of Forensic Medicine, Faculty of Medicine, Medical University of Gdańsk



Andreas Melinato
Head of Institution,
European Forensic Institute, Malta



Martyna Czarnomska
Conference Coordinator,
Department of Forensic Science, Department of Substantive Criminal Law and Criminology, Faculty of Law and Administration, University of Gdańsk



PhD Małgorzata Nadolska-Dawidowska
Department of Forensic Science, Department of Substantive Criminal Law and Criminology, Faculty of Law and Administration, University of Gdańsk



Prof. Joanna Bednarz
Head of the Department of International Business, Faculty of Economics, University of Gdańsk



Martyna Kuczyńska
Department of Biology and Medical Genetics, Faculty of Biology, University of Gdańsk



PhD Joanna Koczur
Institute of Legal Sciences, Faculty of Law and Administration, University of Silesia



Emilia Gruszczyńska
Department of Forensic Science, Department of Substantive Criminal Law and Criminology, Faculty of Law and Administration, University of Gdańsk



PhD Agnieszka Tuszkowska
Faculty of Law and Administration, University of Gdańsk



Sławomir Dajkowski
Faculty of Law and Administration, University of Gdańsk

Organizing Committee



Michelle Yew
General Manager
at the European Forensic Institute



Claire Hadjikou
Director of the Centre of Excellence in Criminology and Forensic Psychology at the European Forensic Institute



PhD Magdalena Wrana
Director of PAS Scientific Centre in Rome



PhD Małgorzata Fijał
PAS Scientific Centre in Rome



Katarzyna Ellert
PAS Scientific Centre in Rome



ROME
29-30 X 2026
ICCFS-PT

VISIT THE WEBSITE

https://forensic.ug.edu.pl/