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SYMPOSIUM

DNAFORAFRICA | 12-14 JUNE 2023 | CAPE TOWN

- WHERE JUSTICE, SCIENCE AND HUMANITY INTERSECT -

DNAforAFRICA, **UNODC**, and the **ICRC**
are proud to present the 3rd DNA Symposium,
a groundbreaking event bringing together
African and International Forensic Experts.



ICRC



South Africa

Dr Vanessa Lynch

AREA OF EXPERTISE: Forensic Expert/Ethics/DNA Databases

DESIGNATION & ORGANISATION:

DNA for AFRICA, GTH-DNA, Regional Director - Africa

BIO / ABOUT

Dr Vanessa Lynch is the Regional Director for DNA for Africa who has extensive experience leading nationwide policy initiatives and working with governments to advance dynamic legislative and policy changes.

Vanessa founded The DNA Project in 2005, and in 2021 launched @DNAforAfrica, dedicated to the use of advocacy outreach and forensic expertise to aid the development of DNA databases and casework programs throughout Africa.

Vanessa is regarded as a key opinion leader in the field of Forensic DNA policy and has been lauded for her leadership in driving the adoption of legislation to administer South Africa's national DNA database, the first of its kind on the African continent. Serving as Deputy Chair of the National Forensic Oversight and Ethics Board (SA), she monitored the implementation of the provisions of the DNA Act in its first five years and now serves on the Forensic Databasing Advisory Board (FDAB) for the ISFG.

PRESENTATION ABSTRACT

Host and MC for Event,
Panel Moderator



South Africa

Dr Linda Naidoo

AREA OF EXPERTISE: Gender-based Violence and Femicide (GBVF) Specialist

DESIGNATION & ORGANISATION:
UNODC United Nations Office on Drugs and Crime,
Regional Office for Southern Africa

BIO / ABOUT

Dr Linda Naidoo is currently coordinating the Gender Based Violence Programme within the SADC region and is employed at UNODC Regional Office for Southern Africa. She majored in Psychology, Social Work, Education, Development Administration, Criminology; and is a Ph.D. holder.

She held the position of Executive Director at a Non- Governmental Organisation (Childline KwaZulu-Natal); was subsequently employed as a Child Protection Advisor at Mott McDonald International Health; further occupying positions at academic institutions and served an array of consultancies.

Her leadership and work experience extends from social development to criminal justice, to crime prevention. She has published several articles and is informed by a local and global perspective.

PRESENTATION ABSTRACT

Panel Discussion B:

Empowering Change: Global Toolkit for Essential Multisectoral Services in Combating Violence Against Women, Conflict Related Sexual Violence

South Africa

Mr Stephen Fonseca

AREA OF EXPERTISE: Medico-legal Investigations

DESIGNATION & ORGANISATION:
ICRC - ACMS



BIO / ABOUT

Mr Stephen Fonseca's career in death investigation started in 1998 as a Coroner in the British Columbia Coroners Service, in Canada. For 8 years he investigated routine sudden and unexpected death enquiries and presided over inquests. In 2006, Stephen developed the Identification and Disaster Response Unit. The primary responsibility was to promote a multi-disciplinary systematic approach to the resolution of missing persons cases through the identification of human remains after mass fatality events, in complex investigations, and cold cases. He participated in federal and provincial technical committees and working groups to improve missing persons and unidentified bodies programs. In 2012, Stephen was awarded the Queen Elizabeth II Diamond Jubilee Medal in recognition of his service to his fellow citizens.

Stephen joined the International Committee of the Red Cross (ICRC) in 2013 as a forensic coordinator, posted in Lebanon until early 2015. He worked on the forensic (technical) elements related to the search for the Lebanese Civil War missing and dead. From 2015 to June 2022 Stephen worked in Africa, primarily as the Regional Forensic Manager, where his focus was to empower authorities (Civilian and Military) to enhance justice and medicolegal systems and systematize medicolegal processes. Stephen provided oversight for strategic planning and operational support to ICRC forensic specialists managing humanitarian forensic programs and activities across the African continent. In June 2022, Stephen transitioned to the role of Manager of the ICRC's newly created African Centre for Medicolegal Systems (ACMS). This new initiative aims to develop regional collaboration and coordination between international agencies, policy makers and practitioners in their efforts to systematize justice and medicolegal processes, but also to improve multi-disciplinary response to mass fatality events from conflict, migration and disasters. He remains a member of the ICRC's Forensic Unit Global Management Team.

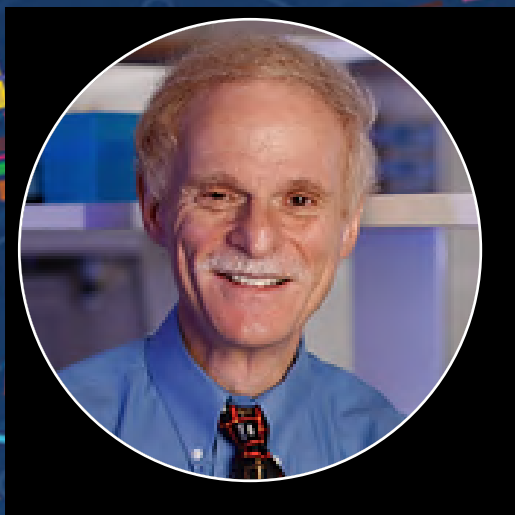
PRESENTATION ABSTRACT

Establishing Identity in Conflict and War: The Crucial Role of Forensic Genetics In Human Identification

The search, recovery and identification and management of the dead in conflict, which includes engaging surviving families, has been greatly aided in recent decades by the advancement of various technologies. DNA technology has seen rapid development, increasing the successful profiling of even heavily degraded remains, and in a multi-disciplinary approach has proven successful time and again towards identification. Consequently, human remains that were not identifiable from past and current conflicts are now being returned to families with lower risk of error and with fewer cases remaining unresolved. The humanitarian implications of these developments are enormous. The presentation will include valuable lessons learned about ensuring that appropriate identification is added to uniforms and on their person, such as dog tags. But, equally important lesson, personal information and DNA samples collected from combatants before they enter the theatre of war become indispensable to expediting the search and identification of dead combatants.

USA

Prof. Bruce Budowle

AREA OF EXPERTISE: Forensic Genetics, DNA Databases, Ethics, Informed Consent**DESIGNATION & ORGANISATION:****Department of Forensic Medicine,
University of Helsinki, Helsinki, Finland
Forensic Science Institute, Radford University, Radford, Virginia
Regents Professor (retired), UNTHSC, Ft Worth, TX**

BIO / ABOUT

Dr Bruce Budowle received a PhD in Genetics in 1979 from Virginia Polytechnic Institute and State University. From 1979-1982, Dr. Budowle was a postdoctoral fellow at the University of Alabama at Birmingham. Working under a National Cancer Institute fellowship, he carried out research predominately on genetic risk factors for diseases such as insulin dependent diabetes mellitus, melanoma, and acute lymphocytic leukemia. From 1983-2009, Dr. Budowle worked at the FBI's Laboratory Division to carry out research, development, and validation of methods for forensic biological analyses. He has published more than 700 articles, made more than 800 presentations, and testified in well over 300 criminal cases in the areas of molecular biology, population genetics, statistics, quality assurance, and forensic biology. In addition, he has authored or co-authored books on molecular biology techniques, electrophoresis, protein detection, forensic genetics, and microbial forensics. Dr. Budowle recently retired as Director of the Center for Human Identification and Regents Professor at the University of North Texas Health Science Center at Fort Worth, Texas where his efforts focused on the areas of human forensic identification, microbial forensics, and emerging infectious disease with substantial emphasis in genomics and next generation sequencing. He continues to research and work in the areas of forensic genomics and contributes to supporting humanitarian efforts via human identification. He currently is a visiting professor in the Department of Forensic Medicine at the University of Helsinki and an adjunct professor in the Forensic Science Institute at Radford University.

PRESENTATION ABSTRACT

Scientific Solutions for Complex DNA Cases

Forensic genomics continues to innovate to yield more information for biological evidence. Indeed, the increased sensitivity and resolution of current technologies has contributed to encountering more complex DNA cases. In essence, the success of forensic DNA analyses has raised awareness and expectations and has opened the doors to complex cases. The DNA results today can range from high quality and relatively straightforward interpretable data or can present as either higher order mixtures, partial profiles, degraded or inhibited samples, and contaminated samples. To address these more challenging samples various technologies have been developed that offer promise to allow a portion of what used to be uninterpretable data to become interpretable data. This presentation will discuss some of these innovations, which includes use of lineage markers, massively parallel sequencing, large numbers of alternative markers (known as SNPs), reducing amplicon size for more efficient PCR, molecular methods to tag DNA to facilitate mixture deconvolution, identifying and quantifying invisible trace levels of DNA, probabilistic genotyping, and exploiting the human microbiome for human identification. Embracing and employing advanced technologies will increase investigative leads via DNA and help to better serve stakeholders and communities.



South Africa

Dr Kathryn Smith

AREA OF EXPERTISE: FORENSIC FACIAL IMAGING

DESIGNATION & ORGANISATION:

(Forensic Art) Chair,
Visual Arts and GUS committee | Visual Arts Department,
Stellenbosch University

BIO / ABOUT

Dr Kathryn Smith (b. Durban, 1975) is an interdisciplinary visual artist with a specialization in forensic facial identification and depiction, applying her skills to archival, forensic, humanitarian, and historical contexts. She advocates for vital academic exchange between operational, institutional and research environments via critical remediation. Her forensic and curatorial work come together as dual expressions of critical care for bodies, infrastructures and non-human things, directed at mutual visibility and legibility. Her doctoral thesis, 'Laws of the Face' engaged a global network of international participants and extensive fieldwork in South Africa, Korea and the United States to provide grounded evidence for improvements in forensic post-mortem identification read through a socio-cultural lens, considering cross-cultural depictions of the dead across international investigatory and media sites, and the largely misunderstood and under-utilised role of Forensic Art in human identification. See www.speakinglikeness.online. In parallel, her contribution to historical restitution work in South Africa received a National Geographic Society Explorers grant in 2019.

PRESENTATION ABSTRACT

DNA 'Face Off':

Challenges and Opportunities of DNA for Forensic Facial Imaging as an Investigative Tool

The discovery of DNA for human identification was a paradigm-shifting event for forensic science, but it has largely remained a molecular concern, an invisible technology with enormous power. Considered the 'gold standard' of identification methods, it has come to represent scientific shorthand for human individuality, prompting ethical questions of what fragment of human biology constitutes the 'self'. In recent years, we have seen the evolution of this technology in forensic genetics and facial phenotyping, but not without some controversy. Forensic DNA phenotyping is now able to map externally visible human characteristics, such as skin and eye colour, (natural) hair colour, some facial features, male baldness pattern and even height, which has provided increased confidence in the presentation of forensic facial depictions of unknown persons. This presentation will consider the scientific as well as socio-cultural impact of the perceived truth claims of these 'faces from DNA' from the perspective of a forensic artist, what it offers the field of forensic facial imaging, and what aspects of this new technology should give us pause for thought.



Somalia

Mr Yassin Farah

AREA OF EXPERTISE: Forensic Scientist

DESIGNATION & ORGANISATION:

National Forensic Expert (NFE)

Office of the Attorney General Federal Republic of Somalia

BIO / ABOUT

Mr Yasin Farah was recently appointed by the Attorney General of the federal government of Somalia as the National Forensic Expert. Prior to taking this position, Yasin served 5 years as a Senior Forensic Science Advisor at the Puntland Bureau of Forensic Science in Somalia. During his tenure, Yasin contributed remarkably towards the institutional capacity building of the forensic bureau in successfully acquiring the right forensic laboratory technology needed to solidly and sustainably establish forensic services in Puntland State of Somalia while ensuring skills transfer of his scientific know-how. Yasin is a forensic scientist with over 15 years experience in working and managing various laboratories in the forensic science, analytical chemistry and pharmaceutical fields from institutions in Sweden, the UK and Somalia. He is trained in forensic crime scene investigations by INTERPOL. Yasin holds a Bachelor in Chemical Engineering from Lund University in Sweden, a Master's in Analytical Chemistry from London Kingston University and a second Master's degree in Crime and Forensic Science from the University College London. A fluent speaker of Somali, English and Swedish.

PRESENTATION ABSTRACT

The Somjust Programme: Enhancing Forensic Capacity in Somalia

This presentation will outline SOMJUST program's comprehensive approach to forensic capacity building in Somalia that covers the entire forensic process from crime scene to courtroom. In addition, this presentation will also shed some light on the challenges that occasionally make it difficult to efficiently conduct forensic work in Somalia. Overall, the SOMJUST programme aims to develop a National Forensic Plan that will harmonize the Somali approach towards gathering, preserving and analysing forensic evidence. It also intends to improve forensic investigation know-how among law enforcement officers in Somalia to ultimately ensure that evidence, when presented in court, will withstand scrutiny of both its integrity and transparency



UK

Prof. Robert Green

AREA OF EXPERTISE: Forensic Science

DESIGNATION & ORGANISATION:

Fellow & Vice President, Chartered Society of Forensic Sciences
Reader: School of Physical Sciences University of Kent

BIO / ABOUT

Prof. Robert Green, Currently Reader in Forensic Science at the University of Kent. Prior to joining the University, Bob worked with the Forensic Science Service and the UK Home Office. During this time, he was responsible for initiating the Home Office's work leading the national program of cold case rape investigation. In 2008, he was made an OBE for his services to forensic science. He currently Vice President of the Chartered Society of Forensic Sciences

PRESENTATION ABSTRACT

Efficiency and Value Derived from Science Lead Investigations of Sexual Crimes

It's widely acknowledged that science continues to advance. As a scientific/investigative community we are keen to promote the very latest developments in science and technology. This presentation will ask, as a society do we always get the best return on investment. Do we capitalise on the advances in science and technology to bring justice to the victims of sexual and violent crime with the 'tools we have at hand'? The talk will share the good practice and learning derived from the (science led) UK Home Office program of cold case investigation, several years ago. Using case studies, lessons learned as well as tracing the offending patterns of sexual/violent criminals, we aim to demonstrate the benefit of the technology we have at our disposal to help bring closure to the victims of SGBV.



USA

Ms Carla Pessanha Loque

DESIGNATION & ORGANISATION:

OVRA (Office Of The Victims' Rights Advocate)

BIO / ABOUT

Ms Carla Pessanha Loque is a Programme Management Officer at the Office of the Victims' Rights Advocate, which seeks to put the rights and dignity of victims of sexual exploitation and abuse by United Nations and related personnel at the forefront of the United Nation's prevention and response efforts. Working in collaboration with Member States, civil society and national human rights institutions, the Office facilitates victim assistance and advocates for victims to receive the remedies they are entitled to, an integral part of which involves the resolution of outstanding paternity and child maintenance claims.

Ms Pessanha Loque holds an LL.M. in International Criminal Law, where she specialised in Gender Based Violence and Human Trafficking for Sexual and Commercial Exploitation. Prior to her work at UNHQ, she worked for the Office as the Senior Victims' Rights Officer for Haiti, assisting victims of sexual exploitation and abuse on the ground.

PRESENTATION ABSTRACT

Ensuring Accountability: Addressing Paternity Claims Involving Peacekeepers

This presentation will give an overview of the achievements and challenges faced by the Office of the Victims' Rights Advocate (OVRA) in supporting the resolution of paternity claims of victims of sexual exploitation and abuse perpetrated by United Nation's staff and non-staff personnel. There are close to 500 outstanding paternity/child support claims relating to uniformed personnel from contributing countries. Resolution of these claims is central to realizing the rights of victims and their children, as they enable them to receive the financial and other support required from their fathers. The presentation will cover the DNA collection, chain of custody and process used by the UN and Member States, before noting the considerable challenges that exist when resolving transnational paternity claims (notably in locating alleged perpetrators). The presentation will conclude by offering innovative ways of overcoming challenges.



South Africa

Adv Bonnie Currie-Gamwo

AREA OF EXPERTISE: Criminal, Litigation, GBVF

DESIGNATION & ORGANISATION:

Special Director Of Public Prosecutions,
Sexual Offences And Community Affairs Unit

BIO / ABOUT

Adv Bonnie Currie-Gamwo holds a Bachelor of Arts as well as Bachelor of Laws degrees. She is a specialist High Court litigator with 24 years prosecutorial experience. Her particular field of expertise is the prosecution and management of GBVF targeting vulnerable groups specializing in child murders, femicide, child pornography, serial rapists, child justice and trafficking in persons. She was instrumental in piloting Child Death Reviews in the Western Cape. She is currently the National Head of the Sexual Offences and Community Affairs Unit responsible for the GBV mandate of the NPA. Under her leadership she increased the footprint of the Thuthuzela Care Centre Model both in number and overall experience. She is committed to enhancing the Thuthuzela experience so that it becomes more than a service point but rather a safe space. She has developed a Femicide Protocol which will be rolled out nationally and ensure prioritization of all femicides in the country. She continues to ensure that the GBVF mandate of the SOCA Unit has the necessary impact and with due regard to the principles of the GBVF National Strategic Plan of South Africa in particular improving access to justice for victims of GBV.

PRESENTATION ABSTRACT

Insights from the GBV DNA Task Team in South Africa and the Optimal Management of GBVF Cases

Gender based violence(GBV) remains a scourge which unless addressed proactively, will continue to scar society as a whole for generations to come. South Africa has put in place various interventions to address the scourge made more difficult by the backlog in finalizing DNA analysis. Optimal management of GBV cases is an imperative to address the scourge. SA adopted a holistic approach which includes both the pretrial and the trial phase. The pretrial phase is embodied in the Thuthuzela Care Centre model introduced by the Sexual Offences and Community Affairs Unit (SOCA) of the National Prosecuting Authority (NPA) in 2001 as a best practice to manage GBV matters. This ensures psychosocial, medical and legal services to the victim to empower them to become survivors. This has ensured an ever- increasing conviction rate of GBV matters seen at TCCs. DNA is a crucial tool in achieving justice for victims of GBV. Addressing the backlog in respect of the DNA analysis is therefore an imperative. In this regard SOCA introduced another best practice in the form of a DNA backlog task team. This collaboration with the Forensic Science Laboratory of the South African Police Service has since October 2022 to date resulted in the fast tracking of 31 266 DNA reports.



Zimbabwe

Mr Donald Mushove

AREA OF EXPERTISE: Forensic DNA Analysis
 Acting Supt Forensic Science, Former Head Forensic Chemistry,
 (Forensic Biologist + Forensic Chemist);
 Fellow (International Association of Coroners and
 Medical Examiners, NV, USA) Forensic investigations Lecturer

DESIGNATION & ORGANISATION:
 Zimbabwe Republic Police (ZRP)

BIO / ABOUT

Mr Donald Mushove is the current Acting Superintendent Forensic Science in the Zimbabwe Republic Police (ZRP). He is a Forensic Biologist, DNA Analyst, Forensic Chemist, and Forensic Science Lecturer responsible with bias towards crime scene management and evidence collection in sexual assault and Gender Based Violence cases within ZRP. Donald sits on the Forensic Science Legislation Crafting Committee (actively participated in the DNA Forensic Science Bill).

PRESENTATION ABSTRACT

Cracking the Code: Zimbabwe's DNA Policy Framework to Combat Serial Sex Offenders

The law of evidence (Criminal Procedure and evidence Act Chapter 9.07) in Zimbabwe is more concerned with the relevance and admissibility of evidence in court. Forensic science practice started in around 1963 in Zimbabwe, to provide services to the criminal justice system, but a concrete legal regulatory framework to govern use of DNA evidence in sexual assault and gender-based violence case was never given much attention until recently. However, there has been a paradigm shift and a spirited fight to enact elaborate laws for the effective use of DNA in sexual assault cases. Forensic experts, legal experts, academic scientists, and judiciary officials have all come together to provide a lasting solution through a candid DNA Policy Framework and a cocktail of activities. Zimbabwe has committed to forensic training, partnerships, legislation development and amendment, rebranding of sexual assault Kits and fighting child marriages. Zimbabwe now has a state-of-the-art Forensic Genetics Laboratory for human identification which is now at an advanced level and has more than seven highly trained Forensic Geneticists. The DNA Bill is now at an advanced level and will soon be passed into law. The Bill will give allowance to establishment of DNA Databases and improved forensic expert reporting.



Ghana (Based in UK)

A/Prof. Aaron Amankwaa

AREA OF EXPERTISE: ETHICS, POLICY, DNA

DESIGNATION & ORGANISATION:

Assistant Professor, Programme Leader (MSc Forensic Science),
Department of Applied Sciences, University of Northumbria (UK)

BIO / ABOUT

Dr Aaron Amankwaa is an Assistant Professor in Forensic Sciences at Northumbria University, UK. Aaron has an academic background in forensic biology, with research experience in DNA profiling and forensic DNA legislation/policy. Through his research, Aaron has contributed oral and written evidence and reviewed policy reports on forensic biometrics for several groups and agencies including the Scottish Independent Advisory Group on Biometrics, the Forensic Genetics Policy Initiative, the Parliamentary Office of Science and Technology, the Office of the Biometrics Commissioner, the New Zealand Law Commission, Independent Review Panel on the DNA Laws of Victoria in Melbourne, Australia, and the Office for Democratic Institutions and Human Rights (ODIHR) of OSCE, Poland. Aaron's consultancy reviews have informed the development and introduction of new laws on forensic DNA/Biometrics, such as the Scottish Biometrics Commissioner Act 2020.

PRESENTATION ABSTRACT

Developing a Forensic DNA Legislative Framework and Policy for Africa

The use of forensic DNA and national DNA databases (NDNAD) has gained popularity in criminal investigations globally. While the technology has been embraced in many high-income countries, its use and regulation are still at an infant stage across Africa. According to the 2019 INTERPOL DNA survey, about 11 out of 53 African countries deploy DNA profiling in investigations and about 7 have established a NDNAD. The lack of forensic DNA legal frameworks, policies, and guidelines poses a challenge to the fight against cross-border crime, protection of public security, and human rights in Africa. DNA data can assist the police in identifying criminals, missing persons, or deceased individuals. However, it can reveal sensitive information about an individual, including their ancestry, susceptibility to diseases, and family ties. Considering this, several countries/ regions worldwide have adopted legislation and policies to govern the acquisition, retention, and use of DNA and databases for investigative purposes, such as the UK PACE Act 1984, the South Africa Criminal Law (Forensic Procedures) Amendment Act 37 of 2013 and the EU Prüm DNA exchange framework. This presentation will discuss the need for an international legal & policy framework for Africa to enhance public security and cross-border cooperation in criminal investigations.



South Africa

A/Prof. Ryan Blumenthal

AREA OF EXPERTISE: Forensic Pathology

DESIGNATION & ORGANISATION:

A/Professor, Senior Specialist / Forensic Pathologist
 Faculty of Health Sciences
 University of Pretoria
 Dip For Med (SA) CML (UNISA) PhD (Wits)

BIO / ABOUT

A/Prof. Ryan Blumenthal, MBChB (Pret), MMed (Med Forens) Pret, FC For Path (SA) Dip For Med (SA) PhD (Wits) Senior specialist forensic pathologist and associate professor at the University of Pretoria's Department of Forensic Medicine. His chief field of interest is the pathology of trauma of lightning (keraunopathology). Lightning medicine forms part of wilderness medicine. Wilderness medicine is about providing emergency care in remote settings. Wilderness medicine is important when considering climate change and the impact global weather systems have on humans, especially in resource-limited and resource-depleted communities. He has published widely in the fields of electrocution, suicide and other areas involving the pathology of trauma. His chief mission in life is to help advance Forensic Pathology Services both nationally and internationally. Blumenthal has published 38 articles in peer-reviewed Journals. He has contributed Chapters to six international textbooks. He has written four books for the public. He is currently an NRF-C2 rated scientist. His book 'Autopsy - Life in the trenches with a forensic pathologist from Africa' (Jonathan Ball Publishers) launched August 2020 became a non-fiction best-seller in South Africa. It is currently in its seventh print and is being translated into Russian. His eight-part documentary "Lightning Pathologist" (Channel 180 DSTV) aired 9 November 2020 to 20 November 2020, and was viewed by over 2.2 million people. His new book – Risking Life for Death – Lessons for the Living from the Autopsy Table (Jonathan Ball Publishers) launches July 2023.

PRESENTATION ABSTRACT

The Imperative of Mandatory DNA Sampling in Homicide Cases for Advancing Justice

On 15 July 1992, Rachel Nickell, aged 24, was walking with her two-year-old son Alex on Wimbledon Common in broad daylight. She was attacked, stabbed 49 times and died at the scene. A young man, Colin Stagg, was suspected, brought to trial in 1994 and acquitted for lack of evidence. A 'cold review' of the case was conducted on 18 December 2008, resulting in the manslaughter conviction on a guilty plea for the killing by Robert Napper. The DNA material which was found could not be tested and analyzed by means of contemporary technology in 1992. Improved techniques in 2004 enabled DNA to be identified, from retained specimens, identifying Napper. The significance of the Rachel Nickell case will be addressed against the current forensic landscape of South Africa. More specifically, the significance of mandatory DNA testing against the backdrop of current South African crime statistics will be addressed. Mandatory DNA testing of all homicide victims will go a long way in the pursuit of truth in the world of forensic pathology. Such a step will take courage, integrity and funding, yet we owe it to both the dead and the living, in the name of reasonableness, necessity and respect. The presentation will conclude by insisting on mandatory DNA testing of all homicide victims in South Africa. According to the latest crime statistics, this will amount to approximately 70 tests per day, or 25 550 DNA tests per year."



South Africa

Brig. Fikile Hlalele

AREA OF EXPERTISE: Forensic Scientist

DESIGNATION & ORGANISATION:

Section Head: Fsl-Biology
Forensic Science Laboratory - Biology Section
South African Police Service

BIO / ABOUT

Brig. Fikile Hlalele, Forensic Analysts with 22yrs of experience coupled with technical expertise, acquired through career level of rank since 2022 as the Section Head of Biology. Responsible for National performance of Biology section in the country. Participate in the SADAC meetings.

PRESENTATION ABSTRACT

The New Gqeberha FSL - A Forensic Turnkey Solution and teh Role of DNA in teh Justice System

The paper presentation will address various essential aspects to be considered during the implementation of a forensic DNA Analysis at Gqeberha. This implantation will enhance processing of DNA crime samples and will positively give considerations encompassing the right to justice. Performing of DNA in the laboratory, serve to address Batho Pele Principles for the province.

Furthermore, the Laboratory will contribute in improving customer service and increase on turnaround time in the application of scientific evidence towards solving crimes that are related to GBVF and others. Competence and adherence to ISO standards in the DNA testing laboratories, the uploading of forensic DNA profiles to the forensic DNA database, establishment of business rules and retention strategies for to replace instruments.

The paper will share the South African experience and road-map to implementing a functional forensic testing DNA laboratory.



South Africa

Dr Nechama Brodie

AREA OF EXPERTISE: Journalism, Homicide, Data + Mortuary Data Management Systems

DESIGNATION & ORGANISATION:

Senior Lecturer, WITS

Project lead: Wits Justice Project, MORBIID

BIO / ABOUT

Dr Nechama Brodie is a lecturer at the Wits Centre for Journalism and the head of the Wits Justice Project. Her research work focuses on public health, misinformation, and studies of fatal violence in the Global South. She runs the Wits-based Homicide Media Tracker and a programme called MORBIID which aims to improve integrated data capture in mortuaries. She has worked as a multi-media journalist, editor, producer and publisher for over twenty-five years and is the author of several best-selling books including 'Femicide in South Africa' and 'Farm Killings in South Africa'. Her most recent academic publications include 'Femicide in South Africa' in the newly released Routledge International Book on Femicide and Femicide, and 'The Role of Social Sciences in Advancing a Public Health Approach to Violence' in the Springer Handbook of Social Sciences and Global Public Health.

PRESENTATION ABSTRACT

Every Contact Leaves a Trace: How to Improve Media Coverage of Forensic Science

Connecting journalists with forensic scientists is critical to promoting forensic science, explaining forensic processes to broader audiences, and even holding scientists and governments to account. But most journalists lack fundamental skills in terms of understanding key concepts or terms related to forensic science and investigations. At the same time, many scientists are under increasing pressure to improve public engagement or to grow their professional profiles. In this session, Dr Nechama Brodie discusses how to engage with the media in ways that can improve accuracy in reporting, with a focus on engagement, accountability and transparency.

France

Dr François-Xavier Laurent**AREA OF EXPERTISE:** Forensic Scientist,
Dna Database Specialist**DESIGNATION & ORGANISATION:**DNA Database Manager
DNA Unit
INTERPOL General Secretariat**BIO / ABOUT**

Dr. François-Xavier Laurent holds a PhD in Molecular Genetics from the University of Paris-Saclay. During the first part of his scientific career, he focused on RNA processing and how molecular defects could lead to neuromuscular genetic diseases. He then pursued his postdoctoral studies at the University of Massachusetts Medical School to apply his expertise to the research of new therapeutic strategies for Huntington's disease. He was recruited in 2013 by the French Forensic Police as Head of Research & Development in Forensic genetics. He managed a team of technicians and engineers to develop innovative methods including DNA phenotyping and next-generation sequencing, applied to criminal investigations. Since 2020, he has been the DNA Database manager at the INTERPOL General Secretariat based in Lyon, in charge of the INTERPOL DNA Database & I-Familia, a new dedicated DNA database to identify missing persons globally using DNA from their relatives. François-Xavier Laurent has published more than 20 peer-reviewed articles in forensic and medical genetics fields over the past 10 years and has received several honors and awards, including the Interior Security Medal from the French Ministry of the Interior in 2018.

PRESENTATION ABSTRACT**Insights into Interpol's iFamilia DNA Database for Humanitarian Efforts in Africa**

The identification of human remains belonging to missing persons is one of the main challenges for forensic genetics. Although other means of identification can be applied to missing person investigations, DNA is often extremely valuable to further support or refute potential associations. When reference DNA samples cannot be collected from personal items belonging to a missing person, a direct DNA identification cannot be carried out. However, identifications can be made indirectly using DNA from the missing person's relatives. The ranking of likelihood ratio (LR) values, which measure the fit of a missing person for any given pedigree, is often the first step in selecting candidates in a DNA database. Although implementing DNA kinship matching in a national environment is feasible, many challenges need to be resolved before applying this method to an international configuration. In June 2021, the International Criminal Police Organization INTERPOL launched I-Familia, a new DNA database aiming to facilitate the identification of missing persons globally through family DNA kinship matching. This straightforward method, based on calculations performed with the DNA matching software BONAPARTE, Worldwide allele frequencies and tailored cutoff $\log_{10}LR$ thresholds, allows for the classification of potential candidates according to the strength of the DNA evidence and the predicted proportion of adventitious matches. This is a powerful method for streamlining the decision-making process in missing person investigations and DVI processes, especially when there are low numbers of overlapping typed STRs. Intuitive interpretation tables and decision trees help strengthen international data comparison for the identification of reported missing individuals discovered outside their national borders, ultimately bringing closure to many families.

South Africa

Brig. Joe Smith

AREA OF EXPERTISE: Forensic Scientist,
DNA Database Specialist

DESIGNATION & ORGANISATION:

SAPS FSL
DIVISION: DETECTIVE & FORENSIC SERVICES
Section Head: Forensic Database Management
– Quality Management



BIO / ABOUT

Brig. Joe Smith is the Section Head of Forensic Database Management at the Forensic Services Division in SAPS. He has more than 34 years experience in the field of forensic science and has played an active and pivotal role in the establishment of the National Forensic DNA Database and the implementation of the provisions of the DNA Act.

PRESENTATION ABSTRACT

South Africa's Forensic DNA Database: Navigating Challenges, Celebrating Successes, and Charting the Future

The paper presentation will address various essential aspects to be considered during the implementation of a forensic DNA database. These considerations encompass the human right and ethical issues, legislative framework governing taking of buccal samples from different categories of persons, performing of DNA in the laboratory, optimizing the forensic DNA database, and implementing quality assurance protocols throughout the entire value chain. This includes aspects such as the collection of exhibit material, training of forensic examiners, authorisation procedures for taking buccal samples, as well as the proper handling and submission of buccal samples and exhibit material to the laboratory, security and access to the forensic database

Furthermore, the competence and adherence to ISO standards in the DNA testing laboratories, the uploading of forensic DNA profiles to the forensic DNA database, establishment of business rules and retention strategies for buccal samples and uploaded DNA profiles, comparison searching, verification procedures for forensic examiners verifying the outcome of the comparison search, as well as the dissemination of DNA forensic investigative leads (FILs) to investigators, and the subsequent follow-up and investigation of the reported FIL DNA leads, will all be explored and discussed.

The paper will share the South African experience and road-map to implementing a functional forensic DNA database and products.



Botswana

Mr Anthony Wally

AREA OF EXPERTISE: Forensic Scientist,
DNA Database Specialist

DESIGNATION & ORGANISATION:

Forensic Biologist & D/Director,
Forensic Science Services,
Botswana Police Service

BIO / ABOUT

Mr Anthony Wally is currently holding a police rank of Senior Assistant Commissioner of Police (SACP) in the Botswana Police Service and working as the Deputy Director of Botswana Police Forensic Science Services Branch. He has 28 years of experience working as a police officer and forensic scientist. Anthony has worked intensively in formulating forensic science policy development, DNA testing, and Databasing in Botswana and has worked on several complex criminal cases providing guidance on general crime scene investigation as well as general investigation. He served as a member of the Southern Africa Development Community (SADC) Commission of Inquiry to the Kingdom of Lesotho and has also worked on issues of safety and security in general through development of CBRNE response capabilities for Botswana. Anthony has furthermore served in various DVI committees; at Interpol for the Forensic Genetics Committee and leading the National DVI process development. He has published in the areas of molecular genetics specifically looking at population groups within and outside Botswana and has also recently served in an advisory role for the COVID response coordination as well as providing an advisory role on safety and security issues.

PRESENTATION ABSTRACT

Benefits of Implementing CODIS to Support DNA Databases in African Regions

There is no doubt that DNA testing has become an indispensable tool in human identification, from both humanitarian aspects such as Disaster Victim Identification to criminal investigations. The often cited challenge by many investigators of costs associated with DNA testing have become neutralized with the mining of DNA data in the form of DNA databases. A carefully implemented DNA database supported by strong policy and oversight structures has been found to provide solutions to several otherwise dead end case investigations. The scalability, flexibility and simplicity of the freely available CODIS has come to offer many investigators an opportunity to find answers to several human identification challenges.



Mauritius

Ms Asha Auckloo

AREA OF EXPERTISE: Forensic Scientist

DESIGNATION & ORGANISATION:

Senior Forensic Scientist at the FSL Mauritius

BIO / ABOUT

Ms Asha Auckloo is a Senior Forensic Scientist, currently posted at the Forensic Science Laboratory of Mauritius. I joined the Mauritius Forensic Science Laboratory in 2006. She holds a Master of Science degree in Bioinformatics with Biology and a Bachelor of Science degree in Biology and Environmental Sciences from the University of Mauritius and also holds a Postgraduate Diploma in Forensic DNA fingerprinting from SIFS, India. She is currently registered for an MPhil/PhD in the field of forensic geosciences at the University of Mauritius. She is currently doing casework dealing with 'crime against the person' in the Biology section including Forensic DNA Analysis.

Her field of expertise is in Crime Scene Investigation and the examination of biological evidence, which includes the analysis of body fluid staining, DNA analysis and the interpretation of DNA profiles. She assists in implementation and maintenance of quality assurance and quality control at the Mauritius Forensic Science Laboratory (ISO/IEC 17025:2017) in the capacity of the Deputy Quality Manager.

She is also involved in training delivery to police officers in 'Crime Scene Management'; 'Role and Responsibilities of First Officers Attending scenes'; 'Health and Safety at Scene of Crime'; 'Importance of Physical/Biological Evidence' and 'DNA Awareness'.

PRESENTATION ABSTRACT

Sharing Best Practices: Lessons Learned from the Mauritius FSL

Forensic Science is gaining more and more importance nowadays in providing tangible comparison and identification of physical and trace evidences recovered from scenes of various science disciplines providing evidence for the criminal justice system in fields of DNA analysis, Toxicological analysis and Drug identifications amongst others. The application of modern techniques in forensic science is playing a pivotal role in conducting in-depth analysis and elucidating crimes that were not possible decades ago. Established in the 1950's, Forensic Science Laboratory, FSL is an autonomous body operating under the aegis of Government of Mauritius to provide a scientific service to the Criminal Justice System by analyzing samples submitted from crime scene and providing expert evidence in criminal trials. The exposes will lay emphasis on the journey of Forensic DNA in human identification and how the FSL Mauritius provides an impartial, high quality and timely forensic service in support of the justice system.



South Africa

Dr Itumeleng (Tumi) Molefe

AREA OF EXPERTISE: Forensic Pathology

DESIGNATION & ORGANISATION:

Senior lecturer in the Division of
Forensic Medicine and Toxicology,
University of Cape Town (UCT)

BIO / ABOUT

Dr. Itumeleng Molefe is a Senior lecturer in the Division of Forensic Medicine and Toxicology, University of Cape Town (UCT), Faculty of Health Sciences and is a Researcher in and the Co-Director of the Neuroscience Institute Brain Bank project. The topic of her MMed thesis is Violence Against Women: Epidemiology and Pathology of Femicides and Suspected Sexual Homicides in Cape Town: A 10-Year Follow-Up Study. She is currently involved in both teaching within and oversight of Undergraduate and Postgraduate courses.

PRESENTATION ABSTRACT

Insight to Africa's First Forensic Pathology Institute: a Holistic Approach to Human Identification

The identification of human remains is crucial for criminal and social justice processes and allows families to find closure. Visual identification of the deceased in the mortuary setting is unsuitable in cases of severe burns or skeletonisation. DNA analysis has proved to be an invaluable scientific method to accurately identify bodies admitted in mortuaries. In response to the high burden of unidentified bodies, the Observatory Forensic Pathology Institute (OFPI) was purpose-built to offer a holistic and professional autopsy service with integration of DNA analyses. Led by A/Prof Heathfield and her established research team, the molecular laboratory within the OFPI will offer an internationally accredited and scientifically accurate forensic DNA analysis to the entire WC province. The team has published widely on the burden, ethical dilemmas, different DNA extraction methods and the recent novel success of massively parallel sequencing (MPS) in positively identifying human remains recovered from sea. This presentation will highlight the value of the OFPI as Africa's first integrated medico-legal scientific institute, and the acquisition of the MiSeq FGx instrument - Africa's first MPS instrument validated for forensic analysis - as excellent examples of the potential to address and transform forensic DNA analysis and molecular autopsies in Africa.



USA

Mr Mark Mogle

AREA OF EXPERTISE: Accreditation

DESIGNATION & ORGANISATION:

Assistant Director for Forensic Science
U.S. Department of Justice
International Criminal Investigative Training Assistance Program
(ICITAP)

BIO / ABOUT

Mr Mark Mogle joined the U.S Department of Justice's International Criminal Investigative Training Assistance Program (ICITAP) in 2005 and currently serves as Assistant Director for Forensic Science. During this time, Mr. Mogle has supported forensic development in over 30 countries including many that achieved international accreditation. Prior to joining ICITAP, Mr. Mogle worked for the Pennsylvania State Police and assisted the laboratory achieve accreditation in 2001. He is a member of member of the American Society of Crime Laboratory Directors and the American Academy of Forensic Sciences.

PRESENTATION ABSTRACT

International Accreditation and the Value of Collaboration

Forensic science is a key component of fair and effective criminal justice systems and requires transparency and reliability to maintain public trust. An overarching goal of ICITAP's forensic assistance programs is international accreditation and adoption of recognized best practices. The presentation will highlight ICITAP's experience cooperating with partner laboratories successfully achieve of accreditation and strategies used to facilitate quality improvements.

Accreditation requires not only an investment in time and money, but the desire for organizational change to include modifications in work processes and laboratory culture. The presentation will discuss ICITAP's approach to assisting laboratory management make this transition. A laboratory attempting to be the first in their country or region to become accredited faces an even more difficult endeavor. The full support of the institution's senior leaders is needed to align the laboratory culture with a change of this nature as well as provide solid management skills including strategic planning, budgeting, and administration of a rigorous quality assurance program. Additionally, scientists must have buy-in and embrace a system that requires fully understanding the capabilities and limitations of their discipline to validate processes, develop reliable standard operating procedures and effectively testify in court proceedings. Each of the milestones in the accreditation process, as well as the onboarding of new technologies, is dramatically easier when laboratories collaboratively share their experience and learn from others within the broader forensic science community.



Zambia

Mr Innocent Makasa

AREA OF EXPERTISE: Forensic DNA Analysis

DESIGNATION & ORGANISATION:

Technical Director Quality Assurance National Forensic Science & Biometrics Department (NFSBD)
Ministry of Home Affairs & Internal Security, Zambia

BIO / ABOUT

Mr Innocent Makasa is a dedicated professional specializing in Forensic DNA Analysis and has played a pivotal role in the establishment of Zambia's first Forensic DNA Laboratory. With a strong belief in the power of DNA analysis, Makasa actively promotes its routine application in penetrative sexual crimes. As an advocate for quality standards, Makasa strives to enforce statutory measures to eliminate the misapplication of forensic science. Their research focuses on utilizing Forensic DNA evidence to solve sexual crimes effectively. Currently, Makasa is working diligently towards establishing the Zambian autosomal and gonosomal DNA Population databases, which will provide statistical estimation of the evidential value of a DNA match.

PRESENTATION /ABSTRACT

Forging Africa's First Forensic Science Regulator In Zambia

The importance of forensic science to the criminal justice system cannot be over-emphasized. The field has rapidly developed in technology and methodologies with much higher resolution and accuracy. The capabilities of forensic science to identify, recover and analyze evidential material have never been this great. The global criminal justice system continues to rely so much on forensic evidence to resolve complex and violent crimes. The demand for forensic evidence has put pressure on forensic laboratories, with some, resorting to using unvalidated methods, unqualified staff, and inappropriate facilities. These glitches, provide a niche for misapplication of forensic science, and cannot be solved by adhering to Quality Standards only, as some problems are as a result of staff's mendacious behaviour. To supplement the efforts of ensuring quality service, and in an effort to reducing malpractices, Zambia, established the Forensic Science and Forensic Pathology regulator (The first of its kind in Africa) with statutory powers to enforce forensic standards and guidelines on both the Public and Private Forensic facilities. The presentation on the "PIONEERING AFRICA'S FIRST FORENSIC SCIENCE REGULATOR IN ZAMBIA" will among other things discuss; the importance and functions of the Zambia's Forensic Regulator.



South Africa

Dr Antonel Olckers

AREA OF EXPERTISE: Forensic DNA Expert

DESIGNATION & ORGANISATION:
AFRICAN FORENSIC SCIENCES ACADEMY (AFSA)

BIO / ABOUT

Dr Antonel Olckers has practiced as an independent DNA expert in forensic science in South Africa since 1998 and has advised on forensic science cases from across Africa. She is a founding member and President of the Interim Executive of the African Forensic Sciences Academy (AFSA). She is also a founding director and full member of the South African Academy of Forensic Sciences (SAAFS) in the field of Biology/DNA and served as Chair since its inception in 2018 until recently.

Dr Olckers provides training on Good Laboratory Practice (GLP), ISO 17025 and accreditation to it, ethics, integrity, and other topics related to forensic science practice. She has worked to empower professionals to handle DNA evidence in court (scientists, public prosecutors, public defenders as well as private sector attorneys and advocates). DNAbiotec has an MOU in place with Legal Aid South Africa for pro bono work, and she was honoured with the Legal Aid Pro Bono award in 2016. Dr Olckers also chairs of the Forensic Science Specialist Technical Committee (FS-STC) of the South African National Accreditation System (SANAS) mandated in South Africa to e.g. accredit laboratories according to ISO standards.

She is a member of the Academy of Science of South Africa (ASSAf), the American Academy of Forensic Sciences (AAFS), and the International Society for Forensic Genetics (ISFG), amongst others. She continues to publish actively in international peer reviewed academic journals in forensic sciences. Dr Olckers is a strong advocate for empowering the next generation of scientists and science leaders in Africa and has received awards for capacity building and a Lifetime Achievement recognising her impact in this regard. She sees collaboration between the public sector, academia, and the private sector as essential to further forensic science and research integrity goals in Africa and beyond. As evidenced from her publications in forensic science she believes in practicing with integrity for science to serve justice.

PRESENTATION ABSTRACT

AFSA: A New Era for Forensic Sciences in Africa

The African Forensic Sciences Academy (AFSA) was established in December 2022 as an International Non-Governmental Organization (INGO). Formerly hosted by the Rwanda Forensic Sciences Laboratory (RFL) in Kigali, Rwanda, AFSA serves as the premier network for forensic sciences practitioners across Africa. Its core values of excellence, transparency, integrity, independence, impartiality, and inclusion shape AFSA's mission to support forensic science professionals in Africa. AFSA aims to showcase the exceptional work of African forensic scientists, foster a collaborative network, and contribute to justice and humanitarian efforts in the region. While avoiding duplication of existing structures, AFSA strives to optimize available resources. During the founding meeting, an Interim Executive (IE) was elected to establish AFSA's structure over the next two years. International best practices and the African Union ethos guided AFSA's deliberations, with the Sydney Declaration serving as a reference document. AFSA also expanded the traditional OSAC classification of forensic science fields to align with the African context.



USA

Mr Tim Schellberg

AREA OF EXPERTISE: DNA Databases

DESIGNATION & ORGANISATION:

President, GTH-DNA

BIO / ABOUT

Mr Tim Schellberg is the Founder and President of GTH Consulting and serves as the General Manager of GTH DNA, a GTH Consulting Company. Tim provides business management and strategic direction to all GTH Consulting companies.

As General Manager of GTH DNA, Tim uses nearly 25 years of forensic DNA experience to manage a team of 17 people committed to advancing forensic DNA policies and projects globally. Tim is internationally recognized for his work in developing forensic DNA legislation and policy. Tim has advised over 60 countries during their efforts to establish or expand national DNA database programs.

Tim received his undergraduate degree from Washington State University in 1988 and his law degree from Seattle University in 1991. Upon graduating from law school, Tim served as a legal advisor and legislative liaison to the Washington Association of Sheriffs and Police Chiefs. From 1994-2006, Tim was a partner at the law firm of Smith Alling, PS. Tim continues to serve as a senior advisor to the Gordon Thomas Honeywell Government Relations firm, a GTH Consulting company.

PRESENTATION ABSTRACT

DNA Hit of the Year: Spotlight on Cases that Exemplify the Power of DNA Databases

The DNA Hit of the Year program is an international collaboration that shares the value and successes of DNA Databases on a global scale through discussions of real cases. These case submissions have enlightened us to what is possible when the advancement of science is combined with the tenacity of DNA scientists and police officers. Tim Schellberg will discuss several of these history-making cases and what made them so exceptional.

South Africa

Prof. Gérard Labuschagne

AREA OF EXPERTISE: Criminal Psychologist

DESIGNATION & ORGANISATION:

Clinical Psychologist: HPCSA & British Psychological Society

Honorary Associate Professor: Department of Forensic Medicine: WITS

President: African Association of Threat Assessment Professionals

Certified Threat Manager: ATAP USA

Advocate of the High Court

Ex-Brigadier: SAPS Investigative Psychology Section



BIO / ABOUT

Prof. Gérard Labuschagne is a Director of L&S Threat Management. He was the Section Head of the South African Police Service. He is a Clinical Psychologist with the Health Professions Council of South Africa & the British Psychological Society. Gérard is an admitted Advocate of the High Court, a trained homicide investigator by the Los Angeles Sheriff's Department. He is one of only two US Association of Threat Assessment Professionals (ATAP) Certified Threat Managers (CTM) from the African continent and currently holds an Honorary Associate Professorship in the Division of Forensic Medicine and Pathology at WITS.

PRESENTATION ABSTRACT

Truth is Stranger than Fiction:

The Story of Thabo Bester,

“Facebook Rapist” and how DNA Played a Role in this Extraordinary Case

In 2011, Thabo Bester's was arrest edfor the rape of two young ladies in Durban and the murder of another in Cape Town. After pleading guilty to these crimes, Bester confessing to the murder and receiving a sentence. However, a turn of events occurred in 2022 when media reports indicated Bester's apparent suicide in prison. Subsequent doubts arose about the deceased person's identity, ultimately revealing that Bester was not the individual found dead in the cell.

This presentation explores the intriguing case of Thabo Bester, examining the circumstances surrounding his arrest, his admissions during the 2011 interview, and the subsequent revelation of his escape. The presenter provides unique insights into the case and reflects on its implications. The challenges faced by law enforcement agencies and the impact on the criminal justice system are discussed in light of the identity crisis and the subsequent launch of a manhunt in 2023.

By delving into this extraordinary case, the presentation highlights the complexities of criminal investigations, the vital importance of accurate identification, and the need for enhanced security measures within correctional facilities.



South Africa

A/Prof. Laura Heathfield

AREA OF EXPERTISE: Forensic Scientist

DESIGNATION & ORGANISATION:

Associate Professor

Division of Forensic Medicine and Toxicology

Faculty of Health Sciences | University of Cape Town

BIO / ABOUT

A/Prof. Laura Heathfield is a Senior lecturer in forensic genetics at University of Cape Town. Experience in lecturing, research and supervision. Skilled in molecular laboratory methods, including next generation sequencing. Principal Investigator of the Molecular Forensics Research Group at UCT, with an interest in human identification, degraded DNA, molecular autopsies and research ethics. Supervised more than 50 postgraduate students and has over 20 peer reviewed publications.

PANEL DISCUSSION A

Panel Discussion A:

Decoding the Challenges of Complex DNA Analysis and Highly Degraded Samples



South Africa

Jakkie Wessels

**Regional Court
President**

AREA OF EXPERTISE: Law

DESIGNATION & ORGANISATION:
Justice

BIO / ABOUT

Jakkie Wessels is a South African lawyer and currently serves as the President of the Regional Court in South Africa. She is also a former prosecutor and has worked in various capacities in the legal profession in South Africa.

PANEL DISCUSSION B

Panel Discussion B:

Empowering Change: Global Toolkit for Essential Multisectoral Services in Combating Violence Against Women, Conflict Related Sexual Violence



South Africa

Lt. Col. Sharlene Otto

AREA OF EXPERTISE: Forensic Scientist

DESIGNATION & ORGANISATION:
SAPS FSL

BIO / ABOUT

Lt. Col. Sharlene Otto has worked in the South African Forensic Science Lab. for 30 years and has given DNA testimony in approximately 600 cases including the murder of Marike de Klerk, wife of a former state president, the Fairhead murders, the triple axe murder of the Van Breda family as well as the high profile murder of Susan Rhode.

PANEL DISCUSSION A and C

Panel Discussion A:

Decoding the Challenges of Complex DNA Analysis and Highly Degraded Samples

Panel Discussion C:

Effective Communication of Scientific Evidence in the Criminal Justice System



South Africa

Amy Whittaker

AREA OF EXPERTISE:

PhD student in the Division of Forensic Medicine and Toxicology at the University of Cape Town

BIO / ABOUT

Amy Whittaker is currently a PhD student in the Division of Forensic Medicine and Toxicology at the University of Cape Town, South Africa. She obtained her BSc in Human Life Sciences from the University of Stellenbosch, followed by her BSc (Med) Honours in Forensic Genetics and her MPhil in Biomedical Forensic Sciences from the University of Cape Town. Her research has focused primarily on the generation of X-STR population data for the South African population for forensic purposes.

PRESENTATION ABSTRACT

X-STRs as an Alternative DNA Profiling Target

DNA profiling is routinely used for forensic human identification within medico-legal investigations. Short tandem repeats (STRs) are typically targeted for this purpose and allele frequencies from the general population are used to determine the probability of a DNA profile matching a random individual by chance. The analysis of STRs located on the X-chromosome (X-STRs) has been demonstrated to be valuable in deficiency paternity and complex kinship testing. However, the potential of X-STRs is currently missed on the African continent due to the paucity of X-STR population data. By systematically reviewing the literature, we showed that the majority of X-STR data has been generated for Asian and European populations, despite the vast genetic diversity observed within African populations. We addressed this gap by generating the first X-STR population data for the major population groups within South Africa, using the Qiagen Investigator Argus X-12 QS kit. Statistical analyses were performed using StatsX and Arlequin. The results illustrated high discriminatory power (> 0.999999999), which suggests X-STRs may be beneficial for forensic casework in South Africa. Additionally, a multitude of potentially novel alleles were identified. The availability of this data could allow X-STRs to be used locally to assist with civil inheritance disputes and the identification of unknown individuals. Other forensic laboratories in Africa are thus encouraged to consider X-STR analyses in their workflows as a supplement to autosomal STR analyses.