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...Toolmarks
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Volume 2
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June 2019

Shining a spotlight on the work of the Australia New Zealand forensic science community

A Bright Future for Research



Dr Kaye Ballantyne
Senior Forensic Project Officer,
ANZPAA NIFS

As a new financial year begins, it's my turn to update you on what's happening in the forensic science community – with a particular focus on the research world.

My secondment at ANZPAA NIFS has provided a great overview into the latest developments in the Australia New Zealand forensic science world. The work of our many practitioners, laboratories and academic partners is improving our science, from strengthening the fundamental underpinnings, creating exciting new technology and enhancing existing processes, examples of which you'll find throughout this newsletter.

Promoting Research in Forensic Science

The outstanding response to the ANZPAA NIFS project support program demonstrated the breadth and depth of high quality research being conducted across forensic science laboratories and universities. Cutting-edge research is being conducted through Australia and New Zealand on a diverse range of topics across many disciplines. In this issue you can read about some of the work being supported, with overviews provided on six of the projects funded. The high level of collaboration between academia and industry was evident, with many of the applications representing joint research efforts between groups.

The connectedness of industry and academia in Australia and New Zealand

has been noted internationally, with ANZPAA NIFS's own Robert Morgan presenting a plenary at the recent Research Innovation to Implementation Symposium at NIST. Rob shared the strengths, successes and future plans of ANZ's research efforts, particularly around the challenges in implementing research into operational practice. In the UK, the House of Lords report examining the state of forensic science in England and Wales noted the importance of a strong co-ordinated research sector, singling out ANZPAA NIFS as a potential model for research across England and Wales.

Engaging practitioners

Many of the projects coordinated by ANZPAA NIFS rely on operational practitioner's knowledge, expertise and time. The last quarter has seen experts from across Australia and New Zealand meeting to discuss AFSAB redevelopments, best practices for crime scene managers, case file review in forensic biology, transitioning technology and forensic fundamentals in fingerprints, firearms and explosive analysis. The support of these individuals and their agencies make the projects featured in this issue possible, and ensure that the products developed are of direct relevance to the community.

Best Paper Awards

Keeping with the theme of celebrating research and practitioners, the ANZPAA NIFS Best Paper Awards are open for submission, and close on 30 September. We encourage authors from Australia and New Zealand to submit their peer reviewed published papers now. Information about the submission process, categories and conditions of entry can be found on the ANZPAA NIFS website.

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ANZPAA
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The Forensic Exhibit.

News from the forensic community

Congratulations!

Please join us in congratulating Associate Professor Alexander Forrest, University of Queensland, and Dr Rebecca Kogios, Executive Director of the Victoria Police Forensic Services Department, who received well deserved recognition of their contributions to Australia in appearing on the 2019 Queen's Birthday Australian Honours List.

Associate Professor Alexander Forrest was awarded an Officer of the Order of Australia (AO) for his distinguished service to dentistry, particularly to forensic odontology, and to education in the field of head and neck anatomy.

Dr Rebecca Kogios received a Public Service Medal (PSM) for her outstanding public service to forensic science and public administration in support of community safety in Victoria.

Best Paper Awards

The ANZPAA NIFS Best Paper Awards are presented yearly in 6 categories and recognise the outstanding contribution members of the Australian New Zealand forensic science community make in adding to the wealth of knowledge available to the broader community.

Applications for the ANZPAA NIFS Best Paper Awards are currently being accepted via email to secretariat.nifs@anzpaa.org.au and *submissions* close 30 September 2019.

For further information on the awards, the criteria for acceptance and to download the application form, please visit:

<http://www.anzpaa.org.au/forensic-science/our-work/awards/best-paper>

House of Lords Report

The UK parliament House of Lords Science and Technology Select Committee released a report entitled "Forensic science and the criminal justice system: a blueprint for change" (May 2019). The report highlights failings in the quality and delivery of forensic science in England and Wales. One of the report recommendations is to create a "National Institute of Forensic Science" citing the role and strategic intent of ANZPAA NIFS. The full report can be found online at:

<https://publications.parliament.uk/pa/ld201719/ldselect/ldsctech/333/33302.htm>

Research and Innovation Advisory Committee

Planning is currently underway for the second Research and Innovation Advisory Committee (RIAC) meeting, which will be held at ANZPAA NIFS on 9 July 2019. A request has been sent to the Specialist Advisory Group network for the top 3-5 research priorities/questions for each discipline and these responses will inform discussions at the RIAC meeting. Following the meeting, the 2020 Annual Projects document will be developed and we are aiming to release this document to the forensic science community in early September. If you are looking to undertake research later in the year or sometime during 2020, keep an eye out for this document.

The Forensic Exhibit.

News from the forensic community

ANZPAA NIFS Project Support

As previously reported, we received a total of 34 applications for ANZPAA NIFS support across two submission rounds during 2018-19. The projects that were approved for a funding contribution in the first round were reported in the last newsletter and a more detailed overview is provided in the following section. The projects that were approved for a funding contribution for the second round were:

- Examining optimal methods of communicating forensic expert opinions to lay stakeholders (University of New South Wales)
- Field testing of illicit drugs - an evaluation of current and emerging technologies (Queensland Health Forensic and Scientific Services)
- Quantifying the usefulness of facial features for reliable facial image comparison (University of New South Wales)
- Investigating deep learning for handwriting examination writership opinions (Forensic Science South Australia)
- Elemental glass database and statistical modelling with likelihood ratios in forensic investigations (Forensic Science South Australia)

ROUND 1 PROJECT OVERVIEWS:

Comparison of Methods for 3D Evidence Reconstruction

Dr Richard Matthews
(PhD BE(hons) MIEAust, University of Adelaide)

The University of Adelaide is currently running a final year electrical engineering honours project thanks to financial support from ANZPAA NIFS. We expect

this research to inform the creation of standards and frameworks for 3D evidence capture at crime scenes.

Currently, we are assessing the accuracy, reliability and usability of lower cost digital photogrammetry systems such as the iPhone XR TrueDepth camera and the Intel Real Sense D435i 3D camera. Experiments are conducted against a specific real-world application of footprint trace evidence. Later this quarter, data collection will be extended to laser-based systems commonly used in the mapping industry. Results from these laser-based systems will be compared with the 3D cameras. From engaging with ANZPAA partners, we understand that time is a critical issue when collecting this type of evidence. As such, we are focusing our efforts on the quickest method for capturing the most reliable data in the field.

Preliminary results have indicated that automated digital photogrammetry technologies have advanced significantly and are a competitor for capturing 3D evidence reconstructions in the field.

Students have been accepted to present preliminary results to an international workshop in Tallinn, Estonia in June. They will also be visiting the Estonian Forensic Science Institute to learn how they conduct virtual autopsies. The observations they make will be applied to the project to increase an understanding of how 3D evidence can be used to minimise exposure for personnel tasked with capturing imagery of autopsies.

The final results of the project will be presented at The University of Adelaide's Ingenuity event on 31 October before a written report provided to ANZPAA NIFS by mid-December.

Automated sperm identification in microscope slides

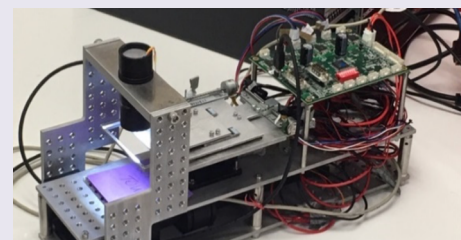
Dion Sheppard

(Institute of Environmental Science and Research)

ANZPAA NIFS funding is supporting ESR to develop a prototype system for automating the detection of sperm cells on microscope slides. The identification of sperm cells is an accurate confirmatory test for the presence of semen. However, current manual microscopic examination of slides in forensic casework is extremely tedious and time consuming. This project is combining a prototype robotic microscope, an image capture process and a machine learning image analysis application to test the ability to automate sperm identification.

ESR has collaborated with Massey University's Mechatronics Sensors and Imaging Laboratory to design a prototype automated multispectral microscopy for slide image capture. With support from Waikato University we have constructed a convolutional neural network to identify sperm within the images that have been captured.

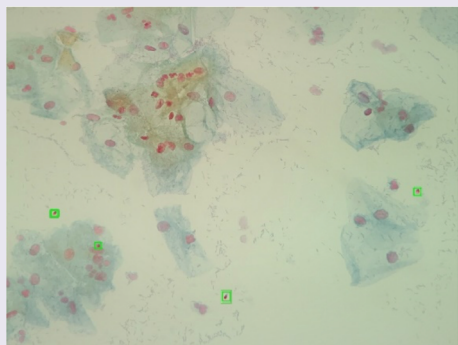
ESR is currently testing the system to determine the suitability of the microscope design and the reliability of the feature detection algorithm for sperm identification. Early results from a proof of concept set of microscope images has provided promising results indicating that sperm cells can be successfully identified automatically even amongst typical cellular and other debris present on slides. Further testing is underway to measure the specificity of the cell identification code and to determine the potential time savings that can be realised by applying automation.



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News from the forensic community

Exploring further value in the waste water stream: a multi-drug analytical approach



Dion Sheppard

(Institute of Environmental Science and Research)

The National Wastewater Testing Program for drugs of abuse in New Zealand, operated by ESR as a service to New Zealand Police, collects samples from wastewater treatment plants around the country on a monthly basis, with coverage of between 75-80% of the population, and tests them for major drugs of abuse.

In this new piece of work, selected wastewater extracts from four sites, representing both large and mid-sized urban populations, are analysed using LC-TOF high-resolution mass spectrometry and screened against a database normally used for screening blood and urine toxicology samples. The instrumental data obtained can be re-screened against other databases without re-extracting or re-running samples. As new compounds of interest are identified, future researchers will be able to pull further information out of today's data.

Approximately 90 drugs are routinely detected in wastewater samples, including illicit drugs (methamphetamine and MDMA), anticonvulsants (gabapentin), heart medication (metoprolol and desacetyldiltiazem), antidepressants (venlafaxine and citalopram) and narcotics (tramadol and codeine). While the illicit drugs show the largest variations in their abundance between sites, some licit drugs also show surprising variability. We are investigating whether the measurements can be used to reliably compare the use of different drugs between sites and over time.

Improving Jurors' understanding of complex forensic medical evidence in court

Dr Soren Blau

(Victorian Institute of Forensic Medicine)

Jurors rely on evidence presented in court to form opinions about the case. The manner in which evidence is delivered in court therefore, potentially has a significant impact on the extent to which the detail of the evidence is understood and interpreted. This project will investigate which format of presenting forensic medical evidence in court provides lay people (i.e. potential jurors) with the best (most accurate) understanding of the evidence, while at the same time is the least confronting. In collaboration with Juries Victoria, this research will build on the findings of a pilot study which involved 120 participants from different medical/legal and non-medical/legal backgrounds evaluating multiple formats of evidence presentation to gauge comprehension of that evidence (Blau et al. 2018).

The current study invites individuals who are eligible for jury service and have been summoned to the Melbourne Law Courts for service, but were not actually selected to serve, to participate. The 'jurors' will be asked to watch six videos of presentations of evidence using different formats including verbal description, colour photographs, 3D CT images, 3D prints and a PowerPoint presentation. Participants will then answer a series of questions pertaining to that specific video. This study includes more focused survey questions and will involve a substantially larger sample size than the pilot study in order to allow for more robust statistical analyses. It is hoped that the findings from this research will better inform relevant forensic medical experts (i.e. pathologists, anthropologists and radiologists), enabling them to tailor their presentations of complex evidence in court to ensure their findings are clearly understood by lay persons.

An Evaluation of the Efficacy of Different Techniques to Aid the Forensic Identification of Human Remains

Dr Jodie Ward

(Forensic and Analytical Science Service)

Project overview:

At present, it is estimated that there are up to 500 cases of unidentified human remains (UHR) and over 2,000 long-term missing persons in Australia, which emphasises the necessity for a national identification program (Ward 2018). A program of this kind would require a multidisciplinary approach to aid the forensic identification of skeletonised UHR, including various imaging, anthropological, radiocarbon dating and DNA techniques. However, there is a lack of empirical evidence as to the efficacy of these techniques due to the inability to compare them to ground truth data in casework. Through the use of human donors at the Australian Facility of Taphonomic Experimental Research, this project aims to determine if accurate, concordant and/or complementary biographical information (e.g. age at death, ancestry) can be obtained from skeletonised UHR using these techniques, optimise the techniques for application to compromised UHR, and devise best-practice recommendations for their use.

Timeline:

This research project commences mid-2019 as part of PhD research at Western Sydney University, in collaboration with the Forensic & Analytical Science Service and the University of Adelaide. Expected completion date for the project is mid-2022.

Research team

PhD student: Madelen Chikhani
Supervisors: Dr Hayley Green (Western Sydney University), Dr Jodie Ward (Forensic & Analytical Science Service) and A/Prof Jeremy Austin (University of Adelaide)

Reference

Ward, J 2018, 'The past, present and future state of missing persons investigations in Australia',

Australian Journal of Forensic Sciences, vol. 50, no. 6, pp. 708-722.

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News from the forensic community

OTHER ANZPAA NIFS SUPPORTED PROJECT OVERVIEWS:

The examination of documents for forensic intelligence purposes – How can we exploit questioned documents to obtain useful knowledge about the source?

Distinguished Professor Claude Roux
(Director Centre for Forensic Science)

The traditional handwriting examination process focuses on the identification of the writer, primarily for court purposes. However, specimen material may not be available for comparison, i.e. at the beginning of the investigation where no suspects have been identified. In such a situation, can we still obtain relevant and useful information from handwriting that could feed complimentary processes like intelligence and investigation? This question is at the crux of this project sponsored by ANZPAA NIFS and primarily undertaken by the UTS PhD student and AFP document examiner Anna Agius. It is hypothesised that a writer retains the class characteristics of their native alphabet (regional characteristics) in their non-native writing.

In the last twelve months, Anna started to identify the handwriting characteristics inherited from learning their native alphabet that have been retained in their English handwriting. Preliminary results demonstrating the potential of the approach on a data set of 'Vietnamese vs Australian English writers' were presented at the Perth ANZFSS Symposium in September 2018. The focus since then has been on investigating feature extraction software and expanding handwriting collection to include broader nationality groups. The next steps will be to improve our understanding of the regional handwriting characteristics of other nationalities and to further develop a predictive statistical model. The ultimate challenging goal is to deliver a semi-automated and proactive tool that can be deployed in an operational environment. In addition to Anna Agius, the research team includes Drs Scott Chadwick, Kylie Jones, Marie Morelato, Sebastien Moret, and Prof. Claude Roux.

NATA's Forensic Science Accreditation Advisory Committee (FSAAC)



Chris Pearman, Chair FSAAC
(Director, Forensic Science South Australia)

The National Association of Testing Authorities, Australia (NATA) established its Forensic Science accreditation program in the mid 1990s to underpin the confidence in the testing offered by the forensic science community. The international standard, ISO/IEC 17025 General requirements for the competence of testing and calibration laboratories, is interpreted by NATA for application to the forensic setting with specific criteria relating to chain of custody, security of exhibits and the facility, court testimony monitoring and case file maintenance and review.

There is an Accreditation Advisory Committee (AAC) for each field of testing, including forensic science, with their role being to provide technical advice to NATA on matters such as:

- Interpretation of the criteria covered by the Standard
- Guidance on the review of existing technical criteria and the development of new ones
- Issues identified at assessments
- Emerging issues of which NATA should be aware
- Identify new areas of accreditation

AACs also review assessment reports, recommend new or continuing accreditations and changes to accreditation status, approve technical assessors and as necessary review complaints and disagreements of a technical nature arising from assessments.

The main criteria for appointment to the committee is for individuals to have the knowledge and technical expertise relevant to the activities overseen by the AAC.

Members are appointed for a 5-year period and may renominate for a further two terms, each of 3 years. Members are appointed each term through an expression of interest process with nominations approved by the NATA Board. The NATA Board reviews the membership of the AACs each year and also reviews the performance of all members following each AAC meeting.

Following a restructure in 2018, Forensic Science became part of the new Legal and Clinical Services Sector with Andrew Griffin and Gillian Treloar as Sector Manager and Deputy respectively. There are 121 sites currently accredited under Legal, including horse racing, microbiology, workplace testing and environmental monitoring laboratories. The larger police jurisdictions have made a significant commitment to accreditation, Queensland Police with 37 sites and NSW Police 19 sites accredited. The number of overseas laboratories accredited by NATA is also increasing with laboratories in Thailand, Qatar, USA, Japan, Doha and the Camel Forensic Laboratory in Dubai.

For more information about NATA and the Forensic Science Accreditation Program visit

► www.nata.com.au

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News from the forensic community

IAFS2020 – 22nd Triennial Meeting in Conjunction with the 25th ANZFSS Symposium



Distinguished Professor Claude Roux
(President, International Association of Forensic Sciences, University of Technology Sydney)

Sydney gearing up to host major international forensics conference

It is an exciting time to be a Forensic Scientist in Australia and New Zealand, as we count down until one of the biggest conferences for our industry in the Southern Hemisphere.

The huge 22nd Triennial Meeting of the International Association of Forensic Science (IAFS 2020), in conjunction with the 25th Symposium of the Australian & New Zealand Forensic Science Society (ANZFSS), will welcome leading experts and colleagues from around the globe to discuss best practices and share experiences.

Importantly, as part of the theme “Forensic Science 2020 – Where to from here?”, the Meeting also aims to improve operational contributions and effectiveness in the light of current and future challenges. The Organising Committee has been working with enthusiasm to stage the world’s most memorable meeting of its kind. As evidence for this, we are proud to announce two exciting partnerships:

- DFRWS (Digital Forensic Research Workshops) to integrate the rapidly evolving field of digital forensic science and deliver the first DFRW APAC as part of the meeting. In other words, for the first time, traditional and digital forensic science and medicine will meet and integrate in a tangible way to meet some of the most critical challenges in our field; and

- ICRC (International Committee of the Red Cross) who is already actively working with the Scientific Committee to profile and shape the Humanitarian Forensic Science program, another emerging theme of forensic science and medicine.

An exciting plenary program will bring together speakers from across four continents, including Dr Linzi Wilson-Wilde OAM (Director, ANZPAA NIFS), and hold, for the first time, a topical panel discussion comprising traditional and modern perspectives as part of the “Where to from here?” debate, which promises to be one of the Meeting highlights.

Keynotes, regular oral presentations and electronic posters will further enhance the education element across twenty-two disciplines, in a program that is being shaped by no less than 85 convenors from around the world. These subject matter experts are essential to ensure the scientific excellence of our program and must be gratefully acknowledged. The call for abstracts will open on Monday 23 September 2019.

But we don’t just want the impacts of IAFS2020 to stay within the walls of the brand new International Convention Centre in Sydney (ICC); the Organising Committee is putting in place a number of initiatives including mini-summits in order to produce a strategic legacy after the conference. Workshops and an entertaining social program will complement the conference while many other activities and partnerships are being discussed. I can guarantee that delegates and participating organisations will have a unique experience.

It is impossible to organise such a conference without sponsors who, this time, will have access to the largest and broadest spectrum of forensic-related people and organisations ever gathered in our region. Sponsorship opportunities are selling fast and I recommend anyone interested to get in touch now.

Finally, I take this opportunity to thank the members of the various Committees for their dedication and support including the Organising Committee, Advisory Committee, Discipline Convenors and the community in general for their support.

IAFS comes to our shores only once in a working-life, join us and be part of history in the making!

IAFS 2020 will be held at ICC Sydney on 21-25 September 2020 under the theme “Forensic Science 2020 – Where to from here?”.

Visit the website
<https://iafs2020.com.au/> for more information.

Join the conversations



▲ Prof. Claude Roux, Dr Carolyne Bird (ANZFSS Secretary and FSSA) and Dr Joao Carlos Ambrosio (President, Brazilian Academy of Forensic Science)



▲ Dr Lucas Blanes (Oswaldo Cruz Foundation, Curitiba, formerly UTS) and Prof. Claude Roux

The Forensic Exhibit.

News from the forensic community



Australian Society of Forensic Odontology Symposium

Forensic Colleagues are welcome to register!

The Australian Society of Forensic Odontology Inc. (AusFO) will be holding their 2019 Symposium between Thursday 24 October 2019 and Saturday 26 October 2019 at The Royal Automobile Club of Australia, Circular Quay, Sydney. Registrations are now open and all colleagues who have an interest in the Forensic field are welcome to attend.

Our keynote speaker is Howard Way, OBE. Howard is the former Police Senior Commander of the UK Disaster Victim Identification (DVI) Unit and has held many command positions in disaster situations in the UK and internationally.

The theme of the Symposium is Identification in the 21st Century. There will be technology updates from speakers on the use of CT, facial recognition and CAD-Cam in identifications; a collaboration day

in which we hope to learn more about our interactive role with police commanders in a disaster situation and Day 3 will concentrate on the forensic humanitarian efforts through the International Committee of the Red Cross (ICRC) and Association of Forensic Odontology for Human Rights (AFOHR).

The Symposium Small excursions programme includes a Pre-Symposium Day trip and an afternoon visit to the newly opened NSW Forensic Medicine and Coroner's Court Complex – the largest facility in Australia. Additionally, there will be the Welcome Cocktail Evening at the Art Gallery of NSW, a Networking Dinner and culminating with the Symposium Dinner and Awards Presentation at Sydney Tower - all designed to allow our delegates to experience the culture and magnificent views of Sydney, Australia

For more information or to request a registration form, send an email to:

▶ ausfo2019symposium@gmail.com

Forensic Science International: Reports

This latest addition to the Forensic Science International (FSI) family aims to improve forensic knowledge exchange by publishing short communications reporting 'methodologically sound' results, regardless of perceived impact. The journal will be a 'one-stop shop' for papers including (but not limited to):

- Forensic anthropology population data
- Forensic and digital forensic case reports
- Commentaries and opinion pieces
- Validation studies, including the reporting of negative results

FSI: Reports is a Gold Open Access journal, meaning that all published manuscripts will be free to access and distribute. More information can be found on the [journal website](#), or our recent feature in [Forensic Magazine](#).

The Forensic Exhibit.

Forensic project update

In brief:

AFSAB Review Implementation

Update



Australasian Forensic Science Assessment Body

Assessment Re-development

ANZPAA NIFS, supported by members of the Fingerprints, Firearms and Crime Scene community, have been hard at work over the last couple of months reviewing the AFSAB assessment process and developing new assessment tools. The new written and oral assessment process is scheduled to go live on 1 July 2019. The practical assessment tools are still in development and further information about their go live date will be provided as it becomes available.

We would like to take this opportunity to sincerely thank all of those individuals who have been involved in this project. There are a large number of you, and without all of your passion and dedication this would not have been achievable.

Policy and Forms

An updated AFSAB Policy and Processes for Certification, and associated forms, will be available to download from the ANZPAA NIFS website over the coming weeks. There have been quite a number of changes to the policy so we encourage you to take the time to familiarise yourself with it.

Candidate and Assessor Guide

Guides for candidates and assessors are in development and will be available to potential candidates and AFSAB approved assessors shortly. The candidate guide aims to assist individuals preparing to undergo their AFSAB assessment and details the core and discipline specific competencies that will be assessed, the assessment structure and recommended resources. The assessors guide will contain similar information contained with the candidate guide as well as provide additional information to aid assessors in performing their role as an AFSAB approved assessor.

Individuals holding current AFSAB certification will receive further information via email when the new AFSAB documents are uploaded to the website.

We are currently establishing mechanisms for continuous improvement and investigating options to streamline the process further - watch this space.

Forensic Standards Development

Update

The ISO TC272 committee met in St Louis, USA, 20 – 24 May 2019 to consider the following four standards:

- ISO/WD 21043:3 – Forensic Sciences – Analysis
- ISO/WD 21043:4 – Forensic Sciences – Interpretation
- ISO/WD 21043:5 – Forensic Sciences – Reporting
- ISO/WD 20964 – Specification for consumables used in the collection, preservation and processing of material for forensic analysis for product, manufacturing requirements and forensic kit assembly.

ISO/WD 21043:3-5 were discussed with members working through the many comments submitted by Working Group members. Consistent terminology and the challenges of identifying terms that would be meaningful to most countries was again discussed and a flowchart indicating the various stages of the forensic process and the relevant terms was developed.

At the end of the meeting, member country representatives agreed to move the three parts to the Committee Draft Stage with Australia taking over the secretariat functions again as the TC secretariat.

No further work will be conducted on ISO WD 20964 as the TC272 members agreed to stop the development of this standard.

Once updated, the new versions of the ISO/CD 21043:3–5 standards will be sent to ISO member countries for mirror committee consideration. To this end Standards Australia committee CH041, the Australian mirror committee to TC272 will meet to discuss the standards. The next meeting of TC272 will be held in Singapore 18–22 November 2019.

Transitioning Technology from the Laboratory to the Field

Update

With the growing demand for rapid policing outcomes and the provision of forensic intelligence, a shift toward in-field analysis of forensic evidence has been observed. Advances in technology have facilitated this move with the development of small, compact, portable scientific instrumentation that can potentially be used by non-scientific personal.

A working group meeting was held at the end of April with the aim of developing a best practice guideline for the transition of laboratory based technology to the field. The guideline is currently in development, with dissemination scheduled for November 2019.

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Forensic project update

In brief:

Forensic Fundamentals - Phase 2



Overview

The aim of the Forensic Fundamentals project is to identify the underpinning science and validation requirements for forensic science disciplines. This project represents a long term activity for ANZPAA NIFS and will see a gap analysis performed for multiple forensic science disciplines. These gap analyses will inform ongoing updates to the Research and Innovation Roadmap Annual Projects document.

Empirical Study Guideline

Practitioner feedback has been incorporated into the second draft of the empirical study guideline, which is currently being reviewed by members of the original working group. The second draft will be submitted to ANZFEC for approval at their meeting in August and it is anticipated that it will then be available for the forensic science community in early September.

Gap Analysis

The outcome of the gap analyses have been disseminated to working group members for feedback and the work on the final report is underway. This report will be presented to ANZFEC at their meeting in August and will inform future research priorities.

Best Practice Guideline for Crime Scene Managers



Overview

The aim of this project is to develop a best practice guideline for crime scene managers that allows for a cross-discipline approach to the collection and management of forensic evidence for both intelligence and evidentiary purposes. The need for this project arose from discussions at the 2016 Australasian Forensic Science Summit, in relation to the future roles of crime scene managers.

Working Group

A working group meeting was held on 29 and 30 April comprising a representative from Queensland Police, New South Wales Police, Australian Federal Police, Victoria Police, Tasmania Police, South Australia Police and Western Australia Police. Discussions held during this meeting in relation to cross-discipline evidence collection and management at the crime scene, as well as cross-discipline triage and evidence recovery at the laboratory, informed the development of a draft document that is currently with working group members for review. This document will be presented to ANZFEC at their meeting in August and it is anticipated that it will be available for the forensic science community in early September.

Model Framework for Double Blind System Testing in Forensic Science



Overview

Although single blind system tests are undoubtedly valuable in providing objective evidence of a practitioner's competence or a system's performance, current tests are generally not regarded as a suitable mechanism to evaluate end-to-end system quality and performance due to a lack of difficulty, human factor issues and the omission of key steps within processes. Therefore, many laboratories are exploring the use of double blind testing, where items of known provenance are introduced into the regular flow of casework without examiners knowledge. This project aims to develop a model framework for laboratories wishing to implement such a process, exploring potential methodological, logistical, ethical and scientific issues.

Working Group

A comprehensive framework has been developed by the working group, with both theoretical and applied examples of how to design, conduct and analyse double blind system testing in operational forensic science laboratories. Final feedback and revision is currently occurring, with the report to be presented to ANZFEC members in August.

Peer Review in Forensic Science



Overview

The aim of this project is to review the current processes for peer review of casefiles and reports in forensic biology and to develop a best practice risk-based approach for results that are intended for both intelligence and evidentiary purposes. The need for this project arose from discussions regarding the definition of an administrative and technical review and how these can be applied differently in different scenarios. The issue was raised for the attention of ANZPAA NIFS in the Western Australia Ross Report, 2017.

Working Group

A working group meeting was held in February and a draft document has been developed. This document is currently going through the final rounds of feedback and will then be presented to ANZFEC members at their meeting in August. It is anticipated that the document will be available for the forensic science community in early September.

The Forensic Exhibit.

Meetings and workshops

Workshop Report:

QSAG Risk Based Thinking Workshop

Date: 26 – 27 March 2019

Location: ANZPAA NIFS, Melbourne Australia

Paula Hawthorne

Quality Manager, Forensic Science Branch, Northern Territory Police

In March 2019 the Quality Managers Specialist Advisory Group (QMSAG) participated in a Quality Risk Training Workshop, hosted by ANZPAA NIFS. The workshop was attended by Quality Managers from all States and Territories and New Zealand. This two-day workshop was organised by the QMSAG in response to the update of the ISO/IEC 17025 Standard in 2017, which combined elements of ISO9001 and 17025. The updated standard has an increased and more formal emphasis on risk assessment and management of risk. The aim of the workshop was to provide Quality Managers with training on how to identify risk and different tools and systems for identification, assessment and management of risk.

Day 1 – Quality Risk Training

The first day of the workshop involved a day of training facilitated by Cath Mulcare from the Ducendi Group. Cath Mulcare has extensive experience in risk management and training, previously holding roles of Chief Risk Officer at the Australian Taxation Office and Defence Health and also Melbourne Storm, where she worked to improve governance and risk systems after the salary cap scandal. Cath tailored a one-day workshop on risk training for the QMSAG group. This workshop covered topics such as risk fundamentals, identification of risk, risk management tools and practical risk application to the Quality Management and Forensic space.

Day 2 – Discussion of Quality Risk Implementation

The second day of the workshop involved discussion and practical application of principles from the first day, into the Quality Management/Forensic Science field, particularly integrating risk management tools into existing policy and instructions.

Scott Azzopardi from Victoria Police's Forensic Service Division presented on their Quality section's adaptation of Process Failure Mode Effects Analysis (PFMEA) as a risk assessment tool and its usefulness in driving correction action. Scott also discussed development of a competency based matrix for ongoing authorisation – to provide an alternative means of demonstrating competency rather than solely proficiency training. Practical sessions also involved an exercise in integrating risk assessment training and tools into the Peer Review Working Group with Robert Morgan, and the QSAG Task Groups performing this exercise related to their tasks.

The Quality Risk training workshop provided a means for all Quality Managers to have face to face discussions regarding the challenges of identifying and managing risk in their organisations. All attendees said they found the training workshop very informative. The workshop was helpful for future planning and preparation, on how to use and integrate risk management tools into systems and for upcoming audits against the updated Standards. Feedback from the workshop was reported to ANZFEC in the April quarter report. Particular thanks goes to Anna Heavey for consulting with the Ducendi Group in the planning for the workshop proposal.

InterFORENSICS 2019

The second edition of InterFORENSICS, a major conference organised by the Brazilian Academy of Forensic Science, was held on 21-24 May 2019 in Sao Paulo. The meeting was well attended with over 1,500 delegates, mainly from Brazil and Latin America. Australia was represented by Distinguished Professor Claude Roux, President of the International Association of Forensic Sciences and UTS, and Doctor Carolyne Bird, Secretary of the Australian & New Zealand Forensic Science Society and Forensic Science South Australia. They respectively delivered a plenary presentation and a workshop, in addition to keynote presentations. A 22-member delegation from the American Academy of Forensic Sciences, including President Zeno Geradts and President-Elect Jeri Roper-Miller also travelled to Brazil and attended the conference as part of their International Educational Outreach Program (IEOP) in Forensic Science. Overall, InterFORENSICS 2019 showed that this meeting has the clear potential to become the main regional forensic science conferences for Latin America,

complementing ANZFSS, EAFS and AAFS events in other parts of the world. InterFORENSICS 2021 will be held in Curitiba.

RI2I - NIST, USA

The Forensic Science Research Innovation to Implementation (RI2I) Symposium was held at the National Institute of Standards and Technology (NIST) in Gaithersburg, Maryland USA on 19 and 20 June. The symposium was convened to discuss the difficulties associated with implementing forensic science research outcomes in the operational sector. The symposium was divided into four main perspectives: Research, Business, Laboratory Management and the Courts. Two speakers were invited to present on their experiences from each of these perspectives, before attendees broke into workshops to further discuss each of the perspectives and the points raised in the presentations.

Robert Morgan ANZPAA NIFS and Dr Gillian Tully UK Forensic Science Regulator, were then invited to present on experiences and learnings from the Australia New Zealand region and the UK respectively. This was a significant opportunity to discuss developments in our region, specifically in relation to the development of the ANZPAA NIFS Research and Innovation Roadmap and Strategy and the formation of the Research and Innovation Advisory Committee (RIAC). The presentation was met with positive feedback and keen interest from attendees in relation to how a co-ordinated approach through a national body can increase collaboration and impact the potential for research outcomes to be implemented by forensic science service providers. The symposium concluded with another round of workshops focusing on implementing a specific research outcome in forensic toxicology.

Recordings of each of the presentations are available online and keep an eye on the NIST website for a summary of proceedings that will be made publicly available. ANZPAA NIFS would like to thank NIST and the organising committee for the opportunity to be involved in this initiative.



The Forensic Exhibit. Events Calendar

2019

JULY

Crime, Justice & Social Democracy 5th Biennial International Conference

15-17 July 2019
Surfers Paradise, Queensland,
▶ <http://www.crimejusticeconference.com.au>

Police Conference 2019 – Future Ready: Leading Innovation and Transformation in Policing

16-17 July 2019
Melbourne, Australia
▶ <https://anzpaa-pc19.org.au/>

SEPTEMBER

The International Association of Forensic Toxicologists (TIAFT) 2019 Conference

2-6 September 2019
Birmingham, United Kingdom
▶ <http://www.tiaft.org/tiaft-agenda.html>

28th Congress of the International Society for Forensic Genetics (ISFG)

9-14 September 2019
Prague, Czech Republic
▶ <http://www.isfg2019.org/>

11th Asian Forensic Sciences Network (AFSN) Annual Meeting and Symposium

17-20 September 2019
Ho Chi Minh City, Vietnam
▶ <http://www.afsn2019.vn/>

International Symposium on Human Identification (ISHI) 2019 – 30th Anniversary

23-26 September 2019
Palm Springs, California
▶ <https://www.ishinews.com/celebrate-ishi-30th-anniversary-in-palm-springs/>

OCTOBER

Evidence Management Conference

2-4 October 2019
Gaithersburg, Maryland, USA
▶ <https://www.nist.gov/news-events/events/2019/10/evidence-management-conference>

Society of Forensic Toxicologists Annual Meeting 2019

13-18 October 2019
San Antonio, Texas, USA
▶ <http://www.soft-tox.org/meeting>

Australian Society of Forensic Odontology Symposium - Identification in the 21st

24-26 October 2019
Sydney, Australia
▶ <https://www.ausfo.org.au/events/ausfo-symposium-2019/>

DECEMBER

2019 ANZSOC Conference – Justice Reimagined: The Intersection between Academia, Government, Industry and the Community

10-13 December
Perth, Australia
▶ <http://anzsocconference.com.au/>

2020

MARCH

Police Conference 2020

Late March 2020
Melbourne, Australia
▶ <https://anzpaa-pc20.org.au/>

SEPTEMBER

22nd International Association of Forensic Sciences (IAFS) and Australia New Zealand Forensic Science Society (ANZFSS) Symposium

21-25 September 2020
Sydney, Australia
▶ <https://iafs2020.com.au/>

2021

9th European Academy of Forensic Science Conference (EAFS)

20 August – 3 September 2021
Stockholm, Sweden

The Forensic Exhibit. Next edition focus

In the next issue:

Forensic project update

- Workflow Mapping for Fingerprint and Drug Analysis
- Round 2 Project Support Overviews
- 2019 – 20 ANZPAA NIFS Projects
- Completion of the AFSAB Review Implementation Project
- 2018 – 19 ANZPAA NIFS Annual Report

Meetings and Workshops

- Specialist Advisory Groups Update
- PC19 Conference Wrap up
- Report from the 2019 ENFHEX and EFPWG Joint Meeting – Interpretative Forensic Sciences, Common Issues

More information:

Newsletter contributions

If you would like any further information on ANZPAA NIFS or would like to contribute to the next edition of *The Forensic Exhibit* please contact Tracie Gould: tracie.gould@anzpaa.org.au

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