Message from the Director

It is hard to believe the year is almost over.

It has been a busy and exciting year for the ANZPAA NIFS team. The Institute has celebrated its 25th Anniversary this year. We saw the completion of our first Business Plan under the new ANZPAA NIFS framework and the team successfully facilitated a Joint Specialist Advisory Group (SAG) meeting of 150 members from a range of forensic science disciplines.

Next year is shaping up to be just as big. The ANZPAA NIFS Groups Review is underway which will consider all of the NIFS groups from a first principles perspective. The Research and Innovation Strategy and Roadmap will provide a mechanism for the provision of funding and support for projects and the NIFS News will be getting a new look in 2018 – we welcome your feedback.

ANZPAA NIFS are excited to support the Australian and New Zealand Forensic Science Society (ANZFSS) 24th International Symposium on Forensic Science in Perth. The symposium is an invaluable opportunity to stay abreast of current research, engage with forensic partners and network with colleagues. We wish the organising committee all the best in preparing for this big event.

I would also like to congratulate the Australian Academy of Forensic Sciences (AAFS) on their 50th Anniversary. What an achievement! The ongoing support by the Australian forensic community, evident at the recent celebratory symposium and dinner in Sydney, is a testament to the academy.

Our 2016-2017 Annual Report is now available online. I invite you to view the report and discover the great work of the Australia New Zealand forensic science community.


I would like to thank the ANZPAA NIFS team and all of the forensic stakeholders for their ongoing hard work and dedication. Together we are achieving wonderful things for forensic science.

I wish you and your families all the best for the festive season. We look forward to working with you all in 2018.

Dr Linzi Wilson-Wilde OAM
Director, ANZPAA NIFS
Awards

ANZPAA NIFS Best Paper Award Recipients 2017

ANZPAA NIFS would like to congratulate the following recipients of the ANZPAA NIFS Best Paper Awards.

<table>
<thead>
<tr>
<th>Category</th>
<th>Recipient</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Best Paper in a Refereed Journal</strong></td>
<td></td>
</tr>
<tr>
<td>Winner</td>
<td>Duncan Taylor and David Powers.</td>
</tr>
<tr>
<td></td>
<td>‘Teaching artificial intelligence to read electropherograms.’</td>
</tr>
<tr>
<td></td>
<td>‘Spatial variations in the consumption of illicit stimulant drugs across Australia: A nationwide application of wastewater-based epidemiology.’</td>
</tr>
<tr>
<td></td>
<td>2. Melanie Archer and James Wallman.</td>
</tr>
<tr>
<td></td>
<td>‘Context effects in forensic entomology and use of sequential unmasking in casework.’</td>
</tr>
<tr>
<td><strong>Best Technical Article or Note</strong></td>
<td></td>
</tr>
<tr>
<td>Winner</td>
<td>Duncan Taylor, Damien Abarno, Emily Rowe and Lauren Rask-Nielsen.</td>
</tr>
<tr>
<td></td>
<td>‘Observations of DNA transfer within an operational Forensic Biology Laboratory.’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>Recipient</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Best Chapter in a Book</strong></td>
<td></td>
</tr>
<tr>
<td>Winner</td>
<td>Jared Castle, Danielle Butzbach, Stewart Walker, Claire Lenehan, Frank Reith and Paul Kirkbride.</td>
</tr>
<tr>
<td></td>
<td>‘Microbial impacts in postmortem toxicology.’</td>
</tr>
<tr>
<td>Highly Commended</td>
<td>Soren Blau.</td>
</tr>
<tr>
<td></td>
<td>‘Missing persons investigations and identification: Issues of scale, infrastructure and political will.’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>Recipient</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Best Literature Review</strong></td>
<td></td>
</tr>
<tr>
<td>Winner</td>
<td>Roger Byard, Ian Musgrave, Garth Maker and Michael Bunce.</td>
</tr>
<tr>
<td></td>
<td>‘What risks do herbal products pose to the Australian community?’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>Recipient</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Best Case Study</strong></td>
<td></td>
</tr>
<tr>
<td>Winner</td>
<td>Jackie Wright, Michaela Kenneally, John Edwards and Stewart Walker.</td>
</tr>
<tr>
<td></td>
<td>‘Adverse health effects associated with living in a former methamphetamine drug laboratory – Victoria, Australia 2015.’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>Recipient</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The Henry Delaforce Award</strong></td>
<td></td>
</tr>
<tr>
<td>Winner</td>
<td>Sgt Gerard Dutton.</td>
</tr>
<tr>
<td></td>
<td>‘A homemade firearm and unconventional ammunition used in a suicide.’</td>
</tr>
</tbody>
</table>
Michaela Kenneally, Jackie Wright and Stewart Walker receive their awards for Best Case Study.

Paul Kirkbride receiving his award for Best Paper in a Refereed Journal - Highly Commended.

Lauren Rask-Nielsen, Emily Rowe, Duncan Taylor and Damien Abarno receiving their awards for Best Technical Article or Note.

David Powers and Duncan Taylor receive their awards for Best Paper in a Refereed Journal.

James Wallman, recipient of a highly commended in the Best Paper in a Refereed Journal category.

Kelly Olds, Roger Byard, Calle Winskog and Neil Langlois receiving their awards for Best Technical Article or Note - Highly Commended.
Recipients of the Best Chapter award - Paul Kirkbride, Jared Castle, Stewart Walker.

Phong Thai, Coral Gartner and Lee Smythe (on behalf of Steve Carter) receiving their awards for Best Paper in a Refereed Journal - Highly Commended.

Roger Byard, recipient of the Best Literature Review award.

Recipient of The Henry Delaforce Award, Sergeant Gerard Dutton.
Forensic Projects Update

ANZPAA NIFS Groups Review

Following the transfer of the Specialist Advisory Groups to ANZPAA NIFS management, with reporting to ANZFEC, a review of all ANZPAA NIFS groups was launched.

The aim of the review is to ensure that the groups are fit for purpose. It will include a review of each group’s purpose, function, structure, membership and reporting requirements. The following ANZPAA NIFS groups will be included in the review:

- Specialist Advisory Groups (SAGs)
- Scientific Working Groups (SWGs)
- ANZPAA Disaster Victim Identification Committee (ADVIC)
- Chemical Warfare Agent Laboratory Network (CWALN)

It should be noted that the Australasian Forensic Field Sciences Accreditation Board (AFFSAB) and Crime Scene Proficiency Advisory Committee (CSPAC) will not be included in this review.

A first principles review of the ANZPAA NIFS Groups was formally launched at the Joint SAG meeting on 9 August 2017. ANZPAA NIFS are busy working through the feedback and are almost ready to provide an agreed purpose for approval by ANZFEC.

Further engagement with the forensic science community will then commence to ensure that the ANZPAA NIFS Groups are fit for purpose and can continue to develop forensic science disciplines across Australia and New Zealand.

Research and Innovation Roadmap and Strategy

The Research and Innovation Roadmap is now available on the ANZPAA NIFS website. This document details the priority areas of focus for research and innovation in forensic science, identified by the Australia New Zealand forensic science community. Each priority area of focus has been aligned to a strategic policing priority to highlight the importance of forensic science research and innovation initiatives in the broader law enforcement environment. It is anticipated that this document will be a resource for the forensic science community to focus research and innovation initiatives towards end user requirements. It will also reduce duplication of effort by identifying opportunities for collaboration.

The specific project questions under each area of focus are detailed in a separate document that is updated annually by ANZPAA NIFS, in consultation with the forensic science community. Anyone interested in obtaining a copy of the current project questions can do so by contacting ANZPAA NIFS.

The Research and Innovation Strategy has been developed to provide a mechanism for ANZPAA NIFS to provide funding and in-kind support for externally managed projects that aim to address one or more of the Roadmap questions. Applications for ANZPAA NIFS support are accepted on a continuous basis and application requirements are detailed in the Strategy.
SMANZFL Developing Future Forensic Leaders Workshop

ANZPAA NIFS is preparing to run the inaugural “SMANZFL Developing Future Forensic Leaders Workshop” in the first half of next year.

The course is aimed at developing leadership skills in the context of delivering forensic science services in Australia and New Zealand. Attendance at the workshop will be via an agency nomination process.

The workshop will utilise residual funding from the former Senior Managers of Australian and New Zealand Forensic Laboratories (SMANZFL). In 2016, a decision was made to amalgamate SMANZFL into the Australia New Zealand Forensic Executive Committee (ANZFEC) due to the overlap in membership and function of the groups. As a consequence, an agreement was made for ANZPAA NIFS to accept the management of SMANZFL residual funds for the purpose of leadership activities.

Assessment of the Investigative Potential of Rapid DNA Instruments

The purpose of this project is to assess the investigative potential of a rapid DNA workflow within Australia through surveys disseminated to police charging stations and DNA analysis laboratories.

Data analysis is complete and a detailed cost benefit analysis is now underway before submission of a publication containing the final results to a peer reviewed journal. This project has identified a number of workflow improvements and highlights what developments are required in rapid DNA technology before it could be implemented for routine use.

Assessment of Parabon® Snapshot™

The use of DNA analysis to aid in forensic investigations is well established in Australia and New Zealand. It relies on the comparison of questioned crime scene samples to known reference DNA profiles. There are a number of commercial providers who now market services which aim to identify Externally Visible Characteristics (EVCs) such as eye colour and hair colour, as well as Biogeographical Ancestry (BGA).

The aim of this project is to assess the Parabon® Snapshot™ service and its ability to identify these characteristics. A total of 12 samples from known donors have been collected and submitted to Parabon NanoLabs for analysis. It is anticipated that an assessment of the results will be completed early in the new year.

Forensic Fundamentals - Phase 2

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 the ongoing updates of the Research and Innovation Roadmap Annual Project Questions document.

The Phase 2 Project Plan was approved by ANZFEC in October and planning is underway for the next working group meeting to develop a guideline. This guideline will assist forensic practitioners to design a new empirical study, or assess the ability of an existing empirical study to demonstrate validity of a forensic method. The working group will comprise forensic science practitioners and academics with expertise in demonstrating validity of a method and experimental design.
The Development of Forensic Standards

ISO TC272 met in Tokyo, Japan 7-10 November 2017. The committee now has 24 participating countries and 17 observing countries, with Italy converting from an observing member to a participating member. The committee resolved to send the following two standards to Final Draft International Standard (FDIS) stage, followed by publication:

1. ISO/FDIS 21043-1 – Forensic Sciences - Terms, definitions and framework
2. ISO/FDIS 21043-2 – Forensic Sciences – Recognition, recording, recovering, transport and storage of items

The following Standard was approved for development by TC272:

• 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.

The above Standard and the following three standards are currently being development by the Working Groups:

• ISO/WD 21043-3 – Forensic Sciences – Analysis
• ISO/WD 21043-4 – Forensic Sciences – Interpretation
• ISO/WD 21043-5 – Forensic Sciences – Reporting

The TC272 resolved that 21043-3 and 4 would be developed as separate standards.

The next meetings of TC272 will be in Stockholm, Sweden 28 May to 1 June 2018, followed by Mexico City, Mexico 19-23 November 2018.

AFFSAB Review Implementation Project

The Australasian Forensic Field Sciences Accreditation Board (AFFSAB) Review Implementation Project was established in June 2017 to facilitate the implementation of recommendations that were developed as part of a major review of AFFSAB between June 2016 and March 2017 (AFFSAB Future Directions Project).

The implementation of the approved recommendations will streamline and standardise accreditation across the crime scene investigation, fingerprint investigation and firearm examination programs. Revised forms and an interim policy and processes document will soon be available on the ANZPAA NIFS website for reference and feedback. The old forms have been made obsolete and will no longer be accepted. Of particular note is the new AFFSAB governance model and standardisation of AFFSAB forms across all disciplines.

A discussion with the relevant SAGs regarding discipline representatives is underway. Approval of these representatives will set in motion a review of the AFFSAB assessment process early in 2018.

Facial Identification Project

The Facial Identification project working group was established to develop resources for forensic facial identification to promote interoperable practice in Australia and New Zealand.

The working group is developing resources in the area of facial identification including terminology, capability development and training. Draft documents were distributed to stakeholders in September and the resulting feedback was discussed at the final project meeting in Brisbane 14-16 November 2017.
The next step for the project is to revise the draft resource documents using the feedback received and present the finalised documents for ANZFEC consideration. Moreover, the group is preparing a submission in relation to the forensic discipline of facial identification for consideration as part of the ANZPAA NIFS groups review.

Members of the Facial Identification Project Working Group.

Evaluative Reporting

The main milestone for the Evaluative Reporting project has been met. The following documents, created by the Evaluative Reporting Project working group are available at:

- An Introductory Guide to Evaluative Reporting
- Evaluative Reporting Process Poster
- Evaluative Reporting Fact Sheet

Two Specialist Advisory Group (SAG) workshops in the area of evaluative reporting were successfully run this year:

- Document Examination SAG: Forensic Handwriting and Signature Examination – Expertise, Validation and Logical reporting, 22 May, Melbourne

Presenters:
- Duncan Taylor, Forensic Science South Australia
- Kaye Ballantyne, Victoria Police Forensic Services Department
- Carolyne Bird, Forensic Science South Australia
- Tobin Tanaka, Canada Border Services Agency

- Chemical Criminalistics SAG: Interpretation of Trace Evidence Using Bayesian Framework, 14–16 November, Melbourne

Presenter:
- Gerhard Wevers, Institute of Environment Science Research

The next step in the project is to investigate options for the delivery of a cross discipline workshop in evaluative reporting.

Familial DNA Searching Policy Implementation Project

The familial DNA searching fact sheet was approved by ANZFEC and will be available on the ANZPAA NIFS website soon. This document highlights a number of process considerations that were raised during the development of the National Policy for Cross-Jurisdictional Familial DNA Searching for the Investigation of Crime in Australia.

This document is the result of extensive consultation with the forensic DNA analysis community and will be a valuable resource for investigating officers, ahead of the launch of the national searching capability by the Australian Criminal Intelligence Commission.
ANZPAA NIFS Publications

The following publications are available for download from the ANZPAA NIFS website:

Publications:
• ANZPAA NIFS Annual Report 2016 - 2017
• Research and Innovation Strategy 2017 - 2020
• Research and Innovation Roadmap 2017 - 2020

News from the Forensic Community

Australia New Zealand Forensic Executive Committee (ANZFEC) Update

The Australia New Zealand Forensic Executive Committee (ANZFEC) met in Melbourne on 26 October 2017 for their final meeting of 2017. All 20 funding agencies were represented and the committee received updates on current projects and ongoing activities, including the SMANZFL Strategic Leadership Workshop, AFFSAB Review Implementation and Facial Identification Project. ANZFEC also approved the closure of a number of finalised projects, including the Research and Innovation Roadmap and Familial DNA Searching Implementation making way for a number of exciting new projects in 2018.

One such project is Forensic Fundamentals – Phase 2 which will continue to investigate the underpinning science of a number of disciplines, and will be an ongoing activity for ANZPAA NIFS in the coming years.

After a number of years of dedicated service, Christopher Flight has retired from the Crime Scene Proficiency Advisory Committee (CSPAC) and the development of the After the Fact Proficiency Test. A certificate of appreciation was presented to Chris in recognition of his contribution to this invaluable initiative.

ANZPAA NIFS Groups Day – Updates to ANZFEC

As a result of the 2016 amalgamation of the Senior Managers of Australia New Zealand Forensic Laboratories (SMANZFL) with Australia New Zealand Forensic Executive Committee (ANZFEC), the Specialist Advisory Groups (SAGs) transferred management to ANZPAA NIFS with reporting lines to ANZFEC.

At an ANZFEC meeting in August 2017, members agreed to maintain strong engagement with the SAGs by supporting the former SMANZFL tradition of inviting current SAG Chairs to provide an update and discuss issues with ANZFEC members.

On 25 October 2017, SAG Chairs from all ANZPAA NIFS Groups provided an update to ANZFEC members on:
• activities and successes of the SAG over the past year
• 2018 action plan and workshop proposals
Current and future research interests
- critical issues pertaining to their discipline.

The forum also provided an opportunity for ANZPAA NIFS to recognise and thank the outgoing SAG Chairs, Peter Collins, Bruce Comber and Bianca Douglas, for their support and hard work during their time in the position.

Chemical Warfare Agent Laboratory Network Update

Jim Pearson, CWALN Chair

In September this year, the Chemical Warfare Agent Laboratory Network (CWALN) Steering Group met for the first time as a Group under ANZPAA NIFS. Prior to this meeting, CWALN was an independent network of laboratories in Australia and New Zealand, with Commonwealth funding through an Australian Federal Police (AFP) Executive and a Steering Committee. However, a change to funding and governance sees CWALN now an ANZPAA NIFS sponsored group accountable to ANZFEC and funded through a similar model to the other ANZPAA NIFS Groups, including the SAGs. All states, territories and New Zealand were represented, and the group spent some time considering the implications of the new reporting structure and accountabilities.

This was also my first meeting as the incoming CWALN Chair – for the life of CWALN to date Steve Wilkinson, ChemCentre WA, has been Chair of the Executive. As the new Chair I would like, on behalf of all the CWALN members, to thank Steve for his work and endeavour he committed to CWALN over many years and may he enjoy his retirement. As an ANZPAA NIFS Group we are also now entitled to an ANZFEC mentor; and Colin Priddis did a fine job at short notice when Sarah Benson was unable to attend the meeting. Colin also doubled as the WA representative for the meeting.

Key outcomes were identified – spurred on by the need to develop an action or business plan in line with the ANZPAA NIFS reporting framework. Major actions noted include:

- Finalise the revised Terms of Reference, and the MOU with Defence, Science and Technology (DST) Group, for ratification by ANZFEC.
- Clarify residual funding and determine budget needs for ongoing activities.
- A revised training regime to be trialled – rather than a single training week attended by one member per jurisdiction, over a two-year period, DST Group will visit each member laboratory and conduct training, including refresher training, around CWALN procedures using the laboratories own facilities and to as many staff as needed.
- Maintain annual collaborative tests through DST Group.
- Expand the effective use of secure server for information sharing.
- Restore contact and collaboration with Australian Bioterrorism Laboratory Network.
(ABLN, the equivalent Bioterrorism Laboratory Network), and perhaps also Australian Radiation Protection and Nuclear Safeguards Agency (ARPANSA).

- Other issues raised for discussion at the meeting covered such matters as security clearances for CWALN members – do we need them, how to obtain them (especially for non-police agency representatives); new technology – sharing experiences; harmonisation of procedures; and whether ACD/Labs was still an appropriate platform for spectra sharing.

ANZPAA Disaster Victim Identification Committee (ADVIC) AGM Update

Rod Anderson, ADVIC Chair

The ADVIC AGM in August 2017 brought together all jurisdictional DVI Commanders at the AFP Office in Darwin. The meeting was hosted by Northern Territory Police and New Zealand representatives were unable to travel but were ‘virtually’ present via video link. The meeting was productive and informative, with a number of key issues discussed and resolved. A number of key priorities were set for the remainder of the financial year, including:

- DVI Commanders Course – to be hosted by South Australia Police in Adelaide in May 2018
- continued evaluation of the NMPVS system, with training and a DVI Phase 4 Exercise ‘Operation Icarus’ scheduled for November 2017 in Brisbane
- consolidation of resources and equipment lists across all jurisdiction
- representation at the Interpol DVI Working Group meetings and Conferences.

The AGM also provided the opportunity to thank a long standing member of the Committee and recent Chair, Commander Tony Fuller APM from NT Police. Tony’s contribution to the DVI capability across Northern Territory, Australia and internationally is well regarded and appreciated. His contributions to DVI training, through the Joint Centre for Law Enforcement Cooperation (JCLEC) in Indonesia, demonstrated the high regard Tony was held by the international DVI community.

We look forward to continuing our strong focus on providing a uniform approach to DVI planning and response across Australia and New Zealand, and when called to assist internationally.

50th Anniversary of the Australian Academy of Forensic Sciences (AAFS)

Professor James Robertson AM, PSM, FRSN, AAFS President

The Australian Academy of Forensic Sciences (AAFS) celebrated its 50th anniversary with two events on Tuesday 21 and Wednesday 22 November 2017.

A one day symposium was held on 21 November at the University of Technology, Sydney (UTS) on the theme of “The Academy, past, present and future.” The 130 plus delegates attending listened to presentations from twelve speakers broadly representing the different age groups of forensic researchers and practitioners, from research students to early to mid-career scientists to more senior and experienced practitioners and researchers. After being welcomed to UTS by the Deputy Vice Chancellor Research and Innovation, Professor Claude Roux in the first presentation challenged the delegates to consider where the forensic sciences were as we move towards 2020 suggesting that we were perhaps at the end of a crossroad and perhaps at the start of an even brighter future. Although it was not possible in one day to cover all aspects of the forensic sciences, a broad range of topics were covered including:
• the latest in crime scene image capture
• the use of new DNA technologies for genetic ancestry prediction
• improving communication of expert opinions
• the changing role of forensic anthropology
• textile damage research
• illicit drug profiling missing persons
• science research in gunshot residue detection
• fingerprint development on porous surfaces
• and the use of rapid on site detection at fire scenes.

The formal presentations were then followed by a very well attended social mixer. As the Academy prides itself in providing a forum for discussion and exchange of ideas, the number of questions asked by delegates during the day and the interaction at the post symposium event were important elements in the success of the day. On behalf of the Academy I want to thank my fellow organising committee members Claude Roux and Shari Forbes, and UTS for their support in supporting the symposium, of course all the speakers who delivered universally interesting and informative presentations, stayed on time and the delegates for their active participation. The good news is that the presentations will be published in volume 50/6 of the Australian Journal of Forensic Sciences (AJFS) in 2018 to mark the 50th anniversary of the journal.

On Wednesday 22 November the Academy held a formal black-tie dinner at the Union University and Schools Club in Sydney. Around 90 members and guests in attendance heard The Hon Michael Kirby AC, CMG deliver a plenary lecture again addressing the theme of the Academy, past, present and future. Michael reflected on the history of the Academy with early memories of our founder, Oscar Schmalzbach and other prominent members. He compared the types of topics covered over the 50 years of the Academy. Whilst accepting that the balance of the Academy and its membership has changed from predominantly law and medicine to
now include many more scientists, he challenged the Academy to think big and engage in the important social issues of the day. Again, the full transcript of his presentation will appear in volume 50/6 of the AJFS.

Reaching the milestone of 50 years is no small achievement and the Academy is proud to have contributed to the development of the forensic sciences in Australia through its meetings, short symposia, research scholarships and the AJFS. The role of the Academy is different to that of the Australian and New Zealand Forensic Science Society (ANZFSS) but in many ways, although complementary organisations, we have shared aims to improve the practice of the forensic sciences. As the current President, it is certainly my intention that the Academy continues to support the broad church that is the forensic sciences and, as we look forward to the next 50 years, I hope we will continue to evolve and remain relevant and above all useful.

Message from the Australian and New Zealand Forensic Science Society (ANZFSS) President

Adrian Linacre, ANZFSS President

The theme for this message is research in the forensic sciences and specifically funding research, and publishing results. The call for more research has been prominent in recent months, having been highlighted in the President’s Council of Advisors on Science and Technology (PCAST) report from the USA and various responses, including that of our own society. It is my perception that so many in the forensic science community would jump at the chance of being part of research programmes, but as outlined below, time and resource do not permit such activities. The very recent Research & Innovation Strategy developed by ANZPAA NIFS is an excellent concept and is greatly welcomed.

Historically, scientific research has tended to be conducted at universities and in conjunction with academics. I write this as one such academic, who runs a research group, writes grant proposals (without much success!) and publishes in forensic science journals. There are many other such university-based groups in Australia and New Zealand doing just the same and therefore there is a real potential to have an active research culture in the forensic sciences. A collation of recent articles sent by the NIFS Secretariat highlights that such a culture exists.

All research needs to be funded and some projects can be expensive. Typically, to support an early career scientist who has just completed a PhD, requires over $110,000 AUD per year to cover salary alone. Funding opportunities are, as anyone who has submitted a research grant will confirm, very limited. The backdrop is the reality of success rates for such applications. Here in Australia the chances of a successful Discovery Grant through the Australian Research Council is close to 10%. Linkage Grants, where there is industry support, is higher but still has a low chance of gaining funding. Any support from industry partners is extremely welcomed and should be acknowledged as such, particularly given this is a time of poor funding.

Publications are essential for all academics. Next year will see the next round of Excellence in Research in Australia (ERA) where all universities and fields of research within the universities are ranked. The concept is to identify research excellence and these are benchmarked internationally and nationally. Disciplines are determined using ‘Fields of Research’ from the Australian New Zealand Research Classifications. ‘Forensic Biology’ is a code under ‘Other Biology’, but there is no such code for ‘Forensic Chemistry’. Funding of each university is affected by performance in the ERA and therefore all universities will be playing the same game to maximise the fields of research of highest ranking, but forensic science is too small to count so any papers published in a forensic science journal will be used to bolster a related discipline. From the ERA there is therefore no way to benchmark forensic science research against other fields of

www.nifs.org.au 13
study, or how Australia and New Zealand compare to the rest of the world. Additionally, the metric used by the ERA alters, but in the past was based on the number of papers by an individual, rather than any quality although this changes from ERA to ERA. My own advice is simple and obvious, publish good quality papers in the best possible journal.

The message is that research in the forensic sciences is on-going despite the problems in finding funds. This can only be to the benefit of forensic science and addresses outside criticism. With this message, I ask all to consider abstracts already for the next ANZFSS symposium in Perth!

Season’s greetings to all,

Adrian

Centre for Australian Forensic Soil Science (CAFSS)

Professor Rob Fitzpatrick, Director of CAFSS and Vice Chair International Union of Geological Sciences (IUGS)

The Centre for Australian Forensic Soil Science (CAFSS) continues to be actively involved in soils forensic work, assisting police forces, government agencies and non-government organisations with the search, location and recovery of soil and mineral samples from crime and environmental disaster scenes in Australia and overseas. Over the past two years, CAFSS have conducted research, training and services in soil forensics to combat crime, terrorism and environmental pollution. They have analysed potential evidence for several homicide, rape and counter-terrorism cases.

Soil Forensics Symposia and Workshops:

In 2016 and 2017 members of the CAFSS have organised and presented at numerous symposia and workshops related to soil forensics. Of note are:

- Symposium on “Forensic Soil Science and Geology” held in association with the 5th International Conference on Criminal and

Environmental Soil Forensics at the 35th International Geological Congress in Cape Town South Africa from 27 August to 4 September 2016. The IUGS presented Rob Fitzpatrick with an award for “Outstanding international contributions to Forensic Geology & Forensic Soil Science”.

- A series of 11 lectures on “Forensic Examination and Interpretation of Soil Evidence” as part of the Trace Evidence Working Group at the 9th Asian Forensic Sciences Network annual meeting in Singapore from 5-9 September 2017.

- A one day “hands-on” soil forensics workshop at Singapore’s Health Sciences Authority (HAS) on 10 September.


Publications and TV articles: CAFSS have published a number of guideline manuals and articles in peer reviewed journals on Forensic Soil Science and Geology over the past year. They have also been actively involved in educating the wider Australian community on the sometimes misunderstood discipline of “Forensic Soil Science and Geology” by collaborating on TV articles and news publications. Please contact Rob Fitzpatrick (rob.fitzpatrick@csiro.au) for further information.
Meetings and Workshops

Forensic Anthropology & Archeology Think Tank Workshop

Soren Blau, Victorian Institute of Forensic Medicine

ANZPAA NIFS is currently undertaking the Forensic Fundamentals and Research and Innovation Roadmap programs. These programs aim to identify gaps in the science underpinning forensic disciplines, so that research outcomes can be meaningfully directed to best inform and promote service provision. For the successful growth and development of forensic anthropology, large-scale collaborations are essential, particularly when applying for funding. In order to foster collaboration, 22 Australian and New Zealand forensic anthropology practitioners, academics and PhD students participated in an ANZPAA NIFS facilitated Forensic Anthropology and Archaeology Research ‘Think Tank’ at the Victorian Institute of Forensic Medicine (VIFM) on 13 October.

The day commenced with an introduction by A/Prof Richard Bassed (VIFM/Monash University), before Dr Linzi Wilson-Wilde and Robert Morgan provided an overview of the role of ANZPAA NIFS and the identification of forensic anthropology as an area of focus for the Forensic Fundamentals Phase 1 project. Professor Stephen Cordner (VIFM/Monash University) highlighted the role of research in addressing weaknesses in forensic anthropology and discussed how research is interlinked with teaching and service provision. Dr Ellie Simpson (Forensic Science SA/Chair Forensic Anthropology Scientific Working Group (SWG)) then provided an update on the work being performed within the SWG, before participants broke into groups to discuss research opportunities in the four priority areas identified: trauma, imaging, human identification and fragmentation/post-mortem interval (PMI) estimation.

The afternoon commenced with a presentation from the Monash University Research Office, which included an overview of the various ARC application options available, including application requirements, as well as tips to improve the quality of a submission. Informed by the morning sessions, participants broke into groups based on their research areas of interest and discussed collaborative projects and possible ARC submission projects for 2018. Potential projects that were identified include: the professionalisation of image analysis, development of population specific standards and development of enhanced...
techniques to assist in PMI estimation. It is hoped that the ideas generated during this session will form the basis of future collaborative research funding applications.

**Quality Manager SAG Meeting**

Representatives from 12 ANZFEC agencies met in Melbourne on 1 December 2017 for the first meeting of the newly reformed Quality Managers Specialist Advisory Group (QMSAG), which is being run on a two-year trial by ANZFEC.

Dean Catoggio, General Manager ANZPAA NIFS, opened the meeting by welcoming each of the representatives to the SAG and providing context to the ANZFEC decisions that led to the reformation of the group. Andrew Griffin from the National Association of Testing Authorities (NATA) then provided an update regarding the upcoming changes to ISO/IEC 17025 General requirements for the competence of testing and calibration laboratories.

Discussions then focused on developing a Business Plan to address the three tasks that ANZFEC had assigned the group (development of a good practice guideline; development of a quality framework for the use of forensic intelligence; and a regular review of issues relating to quality). Anna Heavey (PathWest Laboratory Medicine WA) provided the group with an excellent overview of the outcomes of the 2nd International Symposium on Forensic Science Error Management, which she attended earlier this year.

The group then elected Frances Adamas (Victorian Institute of Forensic Medicine) and Anna Petricevich (Institute of Environmental Science and Research) to the positions of QMSAG Chair and Deputy Chair respectively.

Dr Jill Vintiner, ANZFEC Mentor for the QMSAG, closed the meeting by thanking all of the representatives for their positive contributions in developing a Business Plan for the group to work on over the next two years.

**Advanced Bloodstain Pattern Analysis (BPA) Course**

**Detective Sergeant Hawkins, NSW Police Force**

An ANZPAA NIFS sponsored Advanced Bloodstain Pattern Analysis Course was held in Sydney recently with participants from across Australia taking part in the event.

The Level 3 Course was hosted by the NSW Police Force at the joint Crime Scene Investigation Training & Research Facility at Western Sydney University. The participants, who represented both field and laboratory staff from every jurisdiction, undertook seven straight days of intensive theory and practical sessions.

Successful first meeting of the newly reformed Quality Managers SAG.

BPA Course Participants

Top [L-R]: Shawn Harkins (NSW), Gregory Moon (NSW), Dane Kremers (NSW), Mark Griffiths (NSW), Matthew Simcock (NSW), Paul Holloway (TAS), Charles Connor (TAS), Lee Sloan (AFP), Mark Gellatly (VIC), Kristan Cox (NSW), Alison Sears (NSW), Ellen Konza (NSW).

Bottom [L-R]: Carol Schenk (AFP), Sandy Petley (WA), Sarah Southall (NSW), Alexandra Salerno (VIC), Natasha Douglas (SA), Anna Axel (NT), Kirsty Griffiths (QLD), Mariya Goray (VIC).
Advanced Bloodstain Pattern Analysis (BPA) Course (cont)

Discipline specific expertise was provided by practitioners from the NSW Police Force, Victoria Police and the Australian Federal Police. Participants also got to hear from acclaimed barrister Mr Hugh Selby who provided an in-depth defence perspective; and Director for the NSW Department of Forensic Medicine – Dr Isabel Brouwer who spoke of her clinical experiences, both in Australia and South Africa.

The program culminated in a full-day scene examination of a complex bloodshed event and while the course may have wrapped up, the participants now have 3 months to write an expert report on their examination.
2017 Collaborative Study - Electronic Evidence Specialist Advisory Group (EESAG)

Timothy Bienvenu-Bate, Victoria Police Forensic Services Department

The audio and video (AV) forensic collaborative study is a yearly event that fulfills the requirements of seeking external appraisal from interstate peers for each jurisdiction. From distributed test material, each jurisdiction brings enhanced/analysed/processed results for comparison and discussion. The collaborative study has grown from initially being a workshop to now being a regular component of the EESAG AV Specialist Working Group (AVSWG).

At least one month prior to the EESAG meeting, each jurisdiction is provided with sample material for examination. Each year we seek to focus on different types of problems in both audio and video examinations. The sample material covers typical laboratory requests, often with additional “stretch tests” designed to push the capabilities of our discipline. The collaborative study is held on the day before the yearly EESAG meeting, and as such has become integral with it (at minimal extra cost).

Benefits of the collaborative study include the comparison of methods, equipment (software and hardware) and results (success/artifacting/quality), discussions of jurisdictional capabilities, comparisons of reporting standards and processing practicalities. Where new techniques are introduced, their strengths, weaknesses, viabilities, and effectiveness and explored by the group. These discussions aid attendees in providing constructive advice back to their laboratory managers. This advice can thus inform equipment purchases, methodologies and processes.

This year the study focused on:

- the enhancement of under-exposed CCTV footage,
- identifying modified images (authenticity)
- the recovery of audibly buried speech
- and the analysis of audio to locate suspects in a scene (acoustic analysis).

Results from the different laboratories proved more consistent than usual, despite having different equipment and slightly different approaches. These results indicate that no revolutionary new process was available that would give a laboratory a significant advantage. Subsequently, the participating laboratories can confirm their processing is comparable to that of their interstate colleagues. The 2017 collaborative study provided much discussion on every aspect of the AV problems presented, and was again considered highly successful by the AVSWG group.

2017 Forensic and Clinical Toxicology Association (FACTA) Conference and AGM

Peter Stockham, Forensic Science SA

This is an exciting, but often challenging, time to be working in the field of toxicology. New analytical technology and techniques, new pharmaceutical developments and the continuing proliferation of novel psychoactive substances (NPS) mean there is always a challenge at hand. The Forensic and Clinical Toxicology Association’s (FACTA) scientific meeting seeks to bring together forensic and clinical practitioners to share information and solutions to address new challenges in our field. This years meeting and AGM was held in Melbourne from 19-22 November, attracting 130 delegates from Australia, New Zealand, Singapore, Korea, the United States, Germany and the United Kingdom.

Invited Keynote Speaker Dr Simon Elliott, from Global Forensics (a subsidiary of Abbott in the UK), has 20 years’ experience in clinical and forensic toxicology, and was therefore well qualified to address the audience. He presented three entertaining and enlightening keynote addresses on key areas of change and challenge in modern toxicology practise: investigating NPS, post-mortem toxicology, and clinical and forensic toxicology. Each of his presentations raised
important issues for the awareness of practising clinical and forensic toxicologists. These issues included the importance of context and clinical history in interpretation of results, detection and classification of NPS, and consideration of post-mortem redistribution of drugs. On the NPS front, Dr Elliott reported that according to data collected by the European Monitoring Centre for Drugs and Drug Addiction, the emergence of new NPS may be slowing compared to previous years, but the quantity of existing NPS may be increasing. Internationally and locally, the increased emergence of new fentanyl analogues is of great concern. Their propensity to cause respiratory depression, coupled with their extreme potency, makes overdose and death a higher probability than with use of conventional opioid drugs of abuse.

The second invited keynote speaker was former FACTA President and founder of the Association, Professor Olaf Drummer (Monash University). He presented a review on the evidentiary value of hair drug testing, which included interesting local and international case studies, and examples of where mis-interpretation or over-interpretation of results has had serious ramifications. These scenarios and examples provided valuable reminders of the advantages and limitations of hair drug testing in evidence. The take home message being that although hair is a useful sample type in many cases to determine if an individual has been exposed to drugs over a longer timeframe, it is often not possible to discriminate between drug exposure and active drug use.

The 42 oral presentations by delegates covered the areas of Clinical/General Toxicology (11 presentations), NPS (12), New Analytical Methods (12) and Post Mortem Toxicology (7). Themes and topical aspects within the streams included increasing prevalence of certain pharmaceuticals and drugs of abuse (e.g. tapentadol, pregabalin, heroin, synthetic cannabinoids and opioids) and workplace drug prevalence. NPS in casework, methods for their detection and mechanisms to determine their prevalence in the community were also topics of interest. The emergence of new methods for automation and robotic processing in the laboratory emerged in several talks, and this is sure to gain popularity in the field. The full program can still be accessed at www.facta2017.com.au.

The prize for best oral presentation was awarded to Jingya Yan (UTS Sydney, Investigation of neurotransmitter level change in urine of chronic cannabis users following prolonged cannabidiol administration). The runner up for this award was Jared Castle (Flinders University/Forensic Science SA, Antipsychotic drug degradation in a simulated post-mortem blood model). The best poster award went to Ahra Go (Chungnam National University, Daejeon, Republic of Korea, Determination of biomarkers in vitreous humor for the estimation of post mortem interval by LC/MSMS).

The AGM revealed that the Association is in good health, with strong membership, governance and finances. The latter will allow the continuation of several travel scholarships for future meetings and prizes for best poster and oral presentations. In addition, the Olaf Drummer Travel fellowship was announced, which is to be an annual prize awarded to support travel to an international conference. The Committee, led by President Dr Dimitri Gerostamoulos, was re-elected uncontested.
Overall this meeting was of a very high scientific standard, and provided topical information for forensic and clinical practitioners. Throughout the conference the audience frequently engaged with the presenters with relevant questions and contributions, which is a sure indication of a healthy scientific meeting. There were many high quality presentations by PhD and honours students at this years’ conference, which suggests that the future of Australian forensic and clinical toxicology is in safe hands moving forward.

**Interpretation of Trace Evidence Using Bayesian Framework**

**Kahlee Redman, Forensic Science SA**

Workshop Held: 14 – 16 November 2017, ANZPAA NIFS Melbourne

Whilst Bayes Theorem has routinely been used to assess evidence in DNA and glass analysis within forensics, it perhaps has been underutilised in other forensic disciplines within Trace Evidence. Attendees from most laboratories around Australia descended on Melbourne to hear Gerry Wevers from ESR present on how to apply a Bayes framework to various evidence types.

Over a three-day period, we were treated to some baseline statistics around probability and dataset distribution, moving through to use of Bayes and possible traps. Much discussion was had around the relevance of databases and studies and how to incorporate the research already published.

Many revision questions were used to reinforce the learnings given in relevant case type scenarios.

One of the most useful parts of the workshops were examples in which Bayes had been applied in casework to provide a balanced approach to the evidence interpretation and how this information is relayed in statements or to the courts. All workshop participants agreed that the use of evaluative reporting will be useful to the courts and assist us in providing more meaningful opinions.

Thank you to ANZPAA NIFS for supporting this workshop and to Gerhard for presenting the material in an easy to understand format. I look forward to implementing evaluative reporting into more of our case work.
Events Calendar

2018

2018 Impression, Pattern and Trace Evidence Symposium
22-25 January 2018
Arlington, Virginia
https://forensiccoe.org/event/impression-and-pattern-evidence-symposium/

ICFIS 2018: 20th International Conference on Forensic and Investigative Science
18-19 January 2018
London, United Kingdom
https://www.waset.org/conference/2018/01/london/ICFIS

AAFS 2018: American Academy of Forensic Sciences
70th Annual Scientific Meeting
Science matters
19-24 February 2018
Seattle, Washington, USA
https://www.aafs.org/

ICB 2018: 11th IAPR International Conference on Biometrics
20-23 February 2018
Gold Coast, Queensland
http://icb2018.org/

CSFS 2018 Conference
30 April–4 May 2018
Quebec, Canada
https://www.csfs.ca/event/csfs-2018-conference/

International Society for Forensic Radiology and Imaging (ISFRI) 2018: 7th Congress
10-12 May 2018
Melbourne, Australia
http://www.isfri2018.com/

45th Annual American Society of Crime Laboratory Directors (ASCLD) Symposium
20-24 May 2018
Atlanta, Georgia
https://www.ascldsymposium.com/

8th Biennial Surveillance Studies Network/ Surveillance and Society (SSN/S&S) Conference 2018
7-9 June 2018
Aarhus University, Denmark

6th International Conference on Cybercrime and Computer Forensics 2018 (ICCCF)
1-4 July 2018
Penang, Malaysia
http://www.apatas.org/icccf-2018/

International Police Executive Symposium 2018
19-24 August 2018
Vienna, Austria
http://ipes.info/

The International Association of Forensic Toxicologists (TIAFT) 2018 Conference
26-30 August 2018
Ghent, Belgium
http://www.tiaft2018.org/

Australian and New Zealand Forensic Science Society (ANZFSS) 24th International Symposium 2018
9-13 September 2018
Perth, Western Australia
http://www.ANZFSS2018.com

International Symposium on Human Identification (ISHI) 2018
24-27 September 2018
Phoenix, Arizona
https://www.ishinews.com/
More Information and Newsletter Contributions

If you would like any further information on ANZPAA NIFS or would like to contribute to the next newsletter please forward to Tracie Gould: tracie.gould@anzpaa.org.au

Disclaimer

This newsletter is for general information purposes only. The views expressed in this newsletter are not necessarily those of ANZPAA NIFS. ANZPAA NIFS has taken all reasonable measures to ensure that the material contained in this newsletter is correct. However, ANZPAA NIFS gives no warranty and accepts no responsibility for the accuracy or the completeness of the material.