



Australian and New Zealand FORENSIC SCIENCE SOCIETY



April 2005
Issue 11

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NSW Branch Newsletter

NSW Branch ANZFSS Inc ABN 33-502-753-392

Newsletter by Email

Just a reminder that you can now receive the newsletter by email. Some of the benefits of this are:

- You will receive the email *almost* immediately (in most cases the delay will depend on the receiving email account, but is generally less than a day for a worst-case scenario). You will not have to wait two weeks for the postal service to deliver.
- The newsletter can be viewed in COLOUR!!
- We can save some trees.
- We can save Shaheen lots of time and stress for printing and collating and sending newsletters
- We can save \$\$\$, which will leave more funds available for importing speakers, scholarships and other subsidies currently offered by the Society.

If you would like to receive the newsletter by email, please send me an email:

shaheen.aumeer@uts.edu.au

Please indicate your name, membership number, and the recipient email address.

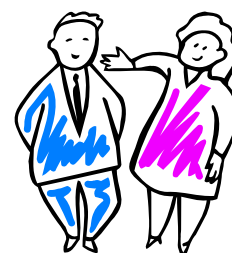
Message from the President

Claude sends his apologies for not having the chance to prepare a message for you this month. At present he is jet-setting to attend the International Fingerprint Research Group meeting next week. This means that he will also be unable to attend the ANZFSS National Delegate's Meeting in Brisbane the week after. Kirsty McAllister and Eric Murray will attend in his place. We look forward to hearing from them on their return!

Welcome to New Society Members

The NSW Branch extends a warm welcome to our newly ratified members:

Amie ALLOTTA
 Brad EARNST
 Zoe FROST
 Kristina ILLINGSWORTH
 Susanna PIETRANTONIO
 Linda THOMPSON





Membership Renewal - FINAL NEWSLETTER NOTICE

For those that have yet to renew their membership, please do so A.S.A.P., as the “grace period” has now come to an end. This means that you will no longer receive newsletter correspondence ☹ (unless we receive your renewal before the next mail-out!)

If you have misplaced your renewal form, we will be happy to send you a new one. Please email: anzfss.nsw.sec@nifs.com.au, c/- Memberships Officer, to let us know.

When renewing, be sure to check the details, sign it and return with your payment. Thank you.

Competition

We are offering a new competition to test your artistic skills... Design the 2006 Membership Card and win the ANZFSS T-Shirt!!

Entries must include the following:

- “NSW Branch of the Australian & New Zealand Forensic Science Society, Inc.”
- The logo (please email shaheen.aumeer@uts.edu.au for a copy of the logo)
- “2006 Membership Card”

Please send all entries to shaheen.aumeer@uts.edu.au

The competition will close on 31st August, 2005, with the winning entry announced in the October 2005 Newsletter.

Enter as many times as you like!!

Letters to the Editor

I recently received the following email from Sarah Awad, one of our newest members:

“I am just emailing you to let you know how much I enjoyed the last newsletter (March edition). I especially loved the 'Are you are Psychopath?' question and could not help but ask all of my family and friends. They then found it so interesting and began telling other people. Soon the word spread and everyone wanted to know where this appeared in. I am pleased to say that a lot of people are interested in subscribing to the monthly newsletter. How cool is that! I also love Tamara's section and I have a word that frequently appears in forensic detective novels but I do not know what it means. The word is 'Antemortem'. I know that premortem refers to before death and postmortem refers to after death, do you suppose antemortem means during death? Anyways thank you for a great newsletter last month and keep up the great work!”

Thank you very much for that email. It is always nice to see students so enthusiastic, and forensic scientists so passionate about their work! In answer to your question, “antemortem” also means “before death”, so for example, the term “antemortem data” refers to data collected before death, such as an odontological x-ray taken at the dentist that you can use to compare to an x-ray from an unidentified body.

We enjoy reading your feedback, so please keep it coming, and hopefully we will all benefit from your comments and queries. - **Ed**



National Delegates Meeting

The ANZFSS National Delegates Meeting will be held in Brisbane on the 21st - 22nd April 2005. Kirsty McAllister and Eric Murray will be our representatives. The agenda will be as follows:

•**Changes to the Rules of Association:** In an effort to increase the professional standing of our Society, we are proposing that the new rules be adopted at the next Symposium. The changes should ensure that the Society will remain an organisation of professional Forensic Scientists. The proposed levels of membership are in line with other professional organisations, and other changes and additions articulate what we are currently doing.

•**Registered Forensic Practitioner Scheme:** Discussion on whether it should continue and in what form. Please canvas your members to see if they think that it is worthwhile continuing and how we should progress it. Many other forms of accreditation now exist that were not in place when the RFPS was introduced.

•**Symposium Report (2006 & 2008):** Proposed update by the Chair of the Symposium organising committee, Clive Cook, on the progress towards the next Symposium. Update by the President, Victorian Branch on the status of the 2008 Symposium.

•**Merchandise:** Update on the Merchandise program and suggestions for improvement.

•**Selection process for Scholarships:** The se-

lection process for Scholarships up until now has been rather ad-hoc with no written criteria for selection and recommendations. Some Branches have come up with their own methods of selecting candidates and I would like to see a National approach adopted.

•**Selection of a Nomination for the Adelaide Medal:** Selection for the Adelaide Medal will be undertaken at the Delegates Meeting. Under the process, ANZFSS has to select one member from Australia or New Zealand to go to the IAFS Organising Committee. The criteria is rather loose in that it states that "*The Medal shall be awarded for personal, significant contribution to the advancement of the forensic sciences*", "*that the recipient be a practitioner or has been a practitioner*" and that they are outstanding in their area. Please note that the successful recipient will be asked to provide a plenary lecture at the IAFS conference. The nomination process will need to be completed by the end of the Delegates Meeting so that the paperwork can be forwarded to the IAFS Organising Committee.

•**National Touring Speakers**

•**Status of Tasmania as a Branch or Sub Branch:** Incorporation Requirements for State Branches

•**Affiliation with the Australian College of Legal Medicine:** The Australian and New Zealand Forensic Medicine Society (ANZFMS) has recently joined with the ACLM.

Your View

It is important that the NSW branch members make the National Body aware of their views on the above topics. In particular, we would like to know if you think that the RFPS should continue, and in what form. If you are unfamiliar with the RFPS, further information can be found on the NIFS website:

<http://www.nifs.com.au/ANZFSS/ANZFSS.html?RFPS.asp&1>

We would also like to hear nominations for the Adelaide medal.

Please send your requests for further information to the Editor. Your comments and suggestions also need to be sent to the Editor before the 20th April 2005, in time for the National Delegates Meeting.

**NEXT MEETING:**

2005 Annual General Meeting

DATE: Wednesday, 27th April 2005**TIME:** 5:30pm for light refreshments, 6:00pm start (note that a talk will follow)**VENUE:** Department of Forensic Medicine, 50 Parramatta Road, Glebe**AGENDA:**

1. Opening
2. Apologies
3. President's Report
4. Secretary's Report
 - Minutes 2004 Annual General Meeting
 - Matters Arising from Minutes
5. Treasurer's Report
 - Setting of membership fees
6. Election of 2005 Office Bearers
 - President
 - Vice President
 - Secretary
 - Treasurer
 - Committee
7. Election of Public Officer
8. General Business

Your attendance at the AGM is very important as failure to reach a quorum will result in the AGM being declared invalid and rescheduled. **Ensure that your voice is heard** by participating - and don't be afraid to bring along queries, concerns and topics for discussion.

Please also consider joining the NSW branch committee. We meet (in general) before the talks each month, co-ordinate and plan events, correspond with members, and ensure that the Society runs smoothly. Take the time to become involved and you will be sure to find this a very rewarding experience - and meet many interesting people.

A nomination form to join the committee is on the back page of this newsletter. The constitution requires that nominations are received at least 7 days before the AGM, but because of the short notice, the current Committee has agreed to waive that notice. Instead, please bring along your nomination form on the AGM night (or pass it on if you are unable to attend - please note that mailing it could result in it not being received in time for the AGM). Please ensure that you are financial, and you have your form signed by two other financial members.

Please feel free to use this space to jot down some issues that you would like to raise at the AGM:



NEXT MEETING: "Missing Persons" by Mark Samways

DATE: Wednesday, 27th April 2005
TIME: 7:00pm start (follows the AGM)
VENUE: Department of Forensic Medicine,
 50 Parramatta Road, Glebe
COST: Free to members, \$5 for non-members

Sergeant Mark Samways has been a police officer for 20 years. He has performed duty in the following areas:

- *General Duties in areas such as Redfern and Mt Druitt.*
- *Police & Community Youth Clubs at Mt Druitt and Bankstown.*
- *Operation Planning Unit for the entire Inner Metropolitan Region.*
- *Last August returned to the Missing persons Unit where he worked fifteen years ago.*

Sgt Samways holds an Advanced Diploma of Police Management and has almost completed a Bachelor of Professional Studies (Civil Care & Security).

The Police Missing Persons Unit has corporate responsibility for all missing persons cases reported in NSW. Last year over 9000 people were reported missing in this State.

The major roles of the Missing Persons Unit are:

- Investigation Management & Support
- Community Awareness
- Interagency Consultation
- Education & Training
- Information Management
- DNA Collection Program
- Disaster Victim Identification

Sgt Samways will be discussing the role of the Missing Persons Unit, the methods used to locate people, difficulties they face and a number of issues surrounding missing persons in general.

We hope to see you there!

MAY MEETING: "DVI In Thailand - An Australian Perspective of the Boxing Day Tsunami" by Sergeant Phil Pearce

DATE: Wednesday, 25th May 2005
TIME: 6:30 for light refreshments, 7:00pm start
VENUE: Department of Forensic Medicine,
 50 Parramatta Road, Glebe
COST: Free to members, \$5 for non-members

Sergeant Pearce has been a member of the NSW Police for 21 years. He began his career in General Duties at Hornsby. He has worked with Police Rescue at Pennant Hills, Education Services at Driver Training in St Ives and moved to Forensic Services in 1990. He worked at Chatswood Crime Scene from 1990 to 2001 and has been with the Forensic Services training unit since 2001. He is now a Team Leader in the Forensic Services Training Section.

Sergeant Pearce has been involved in many homicides. He was heavily involved with the murder of Dr Victor Chang. Other high profile cases he has worked on include the Gulgong fire, Thredbo, the Berowra sea plane disaster, the Bali bombings and the recent south east Asian Tsunami disaster.

The boxing day earthquake and resulting tsunamis that devastated coastal areas of the Indian Ocean prompted a unprecedented response from the rest of the world. Forensic and medical experts from over 30 nations offered their assistance to the worst hit countries. As the death toll grew, the realisation slowly dawned that the responding nations were sending their people into what was possibly the worst humanitarian disaster of all time. To date, it is estimated that over 300,000 people have been killed as a direct result of the tsunamis.

The Kingdom of Thailand responded to the international offer of assistance and the first of the international teams to hit the ground was Team Australia. The Australian team, soon joined by the New Zealand team, together had to establish command lines, communication lines and a clear mission to enable effective Disaster Victim Identification procedures to be put in place. The rest of the world followed.



ADVANCED NOTICE: June Meeting - David Pearson

DATE: Wednesday, 22nd June 2005

TIME: 6:30 for light refreshments, 7:00pm start

VENUE: Department of Forensic Medicine,
50 Parramatta Road, Glebe

COST: Free to members, \$5 for non-members

TOPIC:

David Pearson is the Senior Fire & Explosion Specialist at TestSafe Australia. He will speak to us about the forensic investigation of different types of explosions. A more detailed abstract will be provided in upcoming newsletters.

REVIEW: "Contemporary Research in Forensic Science"

- UTS Graduands, ANZFSS Meeting, 23rd March, 2005

Firstly my apologies for not being able to give you a photograph of the speakers on the night - I was so busy with other things that I completely forgot to get my camera out! - Ed.

The following are full abstracts from each of the speaker's Honours dissertations:

Investigating the Use of Fly Larvae in the Identification of Accelerants - Lisa Mingari



The aim of this research project was to demonstrate that accelerants can be detected and characterised through the analysis of *Lucilia cuprina* larvae. The accelerants, petrol and kerosene were successfully detected for a period of four and five days respectively.

This project was performed by firstly burning meat with a known accelerant and then allowing it to ventilate for 6 hours. Three hundred fly larvae were subsequently added to each meat sample and allowed to feed undisturbed for 16 hours. Five larvae from each sample were then collected and analysed daily for a period of five days.

A solid-phase microextraction (SPME) fibre was used to extract the volatiles, which the fly larvae had ingested. This was achieved by placing the larvae in an unlined paint tin heated to 90°C. The lid of the tin had a hole punched into it using a hammer and nail to accommodate the fibre. Once the lid was hammered shut and the fibre inserted the tin was placed in an oven set at 90°C for 3 minutes.

The volatile components absorbed onto the fibre were subsequently injected into the injection port of

a gas chromatograph/mass spectrometer (GC/MS), where they were subsequently desorbed and analysed. The samples were evaluated on a daily basis as being either positive or negative for the accelerant of interest, based on the target compounds listed in the American Society for Testing and Materials (ASTM) standard E 1618-01.

The Chronological Sequencing of Indented Impressions and Ink Strokes on Documents using the Electrostatic Detection Apparatus (ESDA) - Sam Luff



The electrostatic detection apparatus is a device routinely used in the forensic examination of questioned documents, for the revelation of indented writing. Another function of this device which has been researched, is the chronological sequencing of indented writing with ink writing. Research has indicated that a sequence diagnosis of indented writing over ink strokes is reliable, but the converse sequence is not.

In this research project, a reliable ESDA method for the sequencing of indented writing and ink writing was developed. The development of this method consisted of two phases.

The first phase developed a standardised and reproducible ESDA method for the development of indented writing on documents. Each parameter of the ESDA technique was varied to assess its influence on the development of indented writing, and to determine which parameters needed to be standardised in a reproducible method, and the most suitable setting to use to develop a clear and uniform image of the indented writing. Reproducibility was achieved, but was limited by the nature of the ESDA technique, particularly the lack of automation.

Continued on Page 7...



REVIEW: "Contemporary Research in Forensic Science"

- UTS Graduands, ANZFSS Meeting, 23rd March, 2005 *Continued...*

The second phase further developed the standardised and reproducible method, by making adjustments necessary to differentiate intersections between indented and ink writing of different sequences. Each parameter of this developed method was varied to determine which variations would affect the accuracy of the method.

Finally, the developed sequencing method was tested in a blind study, using documents containing handwriting, and signatures. The method correctly determined The sequence was correctly determined in 95% of the blind study documents. The sequencing method has the potential to be reliably used in routine case work, but the ESDA would need to be modified to fulfil this potential.

Development of a High Performance Liquid Chromatography Method, with Photodiode Array and Mass Spectrometry Detection for Explosives Residue Analysis - Nikki Deery



This research describes a gradient reverse phase high performance liquid chromatography method, which was developed with both photodiode array (PDA) and mass spectrometry (MS) detection, for explosives analysis residues. Isocratic and gradient conditions were tested with two Agilent columns using acetonitrile-water and methanol-water mobile phases.

Resolution of a mixture of explosive standards could not be achieved using isocratic conditions; however, slight improvements were observed when gradients were tested. Through trial and error a methanol-water gradient method was developed and optimised for the complete separation of 14 nitroaromatic, nitramine and nitrate ester explosive compounds in less than 11 minutes. The method was validated and shown to be linear, reproducible and highly sensitive with detection limits around the low ppb levels.

This method was transferred to a liquid chromatography mass spectrometry system (LC/MS), where several adjustments were made to suit the instru-

ment. Ammonium acetate and ammonium formate were used as additives in the mobile phase, to promote formation of characteristic spectra for easier identification. The additives were effective, however not all compounds were detected. As a result, a method was developed and optimised for detection of 7 explosive compounds in less than 8 minutes. No validation was completed with the LC/MS data as further work was required to find suitable conditions for the ionisation of all 14 compounds. However, detection limits were estimated to be around the low ppm level.

The optimised gradient methods were evaluated for use with real case samples, as authentic post-blast debris was obtained from an explosive range day. A simple acetonitrile extraction method was used which was beneficial, as the extractions were exceptionally clean. The results from the analysis of these extractions demonstrated the effectiveness of the gradient methods, as traces of explosives were detected with minimal background interference. Combining the response of both PDA and MS systems allowed positive identification of explosive residues.

Both methods were quick and simple to operate and would be useful procedures in a time constrained laboratory. The recommendation to the FCTDVI unit was to implement the high performance liquid chromatography-photodiode array method and to direct future studies towards finding more favourable conditions for ionisation of the explosive compounds for ion trap mass spectrometry detection.

We would like to thank Lisa, Sam & Nikki for sharing with us their very interesting research, and wish them all the best in their future endeavours.

No Need for the Psycho Test Here!



(Thanks to Aldo for this funny)



Upcoming Fire Education Nights & Conferences in NSW

Education Night:

Fire Cause Determination - The Next Step

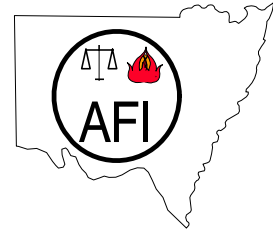
DATE: Thursday, 28th April 2005

TIME: 6:30pm

VENUE: Ryde Eastwood Leagues Club, Ryedale Road, West Ryde

COST: Free

SPEAKERS: Inspector Mark Cavanough & Inspector Paul Bailey



Ok, so you have spent hours working out exactly how the fire occurred. You know how it has spread through the building and just how lucky everyone was to get out. **WHAT NOW!!** How can you as the fire investigator prevent such an incident occurring again?

Worldwide research has highlighted such issues as Lightweight Construction, Smoke Toxicity and Flashover Times as major factors influencing occupant and fire fighter safety. This seminar will detail the innovative INVESTIGATION STRATEGIES PROJECT adopted by the NSW Fire Brigades that is using accurate origin & cause investigation as the major tool to influence the development of Building Codes and Australian Standards that protect you and your families. Attendance at this seminar is a must for any investigator who really believes they can make a difference.

NSW AFI Conference:

Electrical Fires - The Shocking Truth

The Investigations of Appliance & Electrical Fires

DATE: 18th - 19th August 2005

VENUE: Carlton Crest, Sydney



The objective of this two day conference is to promote and enhance the education of personnel involved in various aspects of fire investigations. The major focus points of the conference are:

- a) The role and responsibility of all parties involved in appliance and electrical fires. How do they work with each other?
- b) The understanding of mechanisms by which electrical faults cause fires in wiring and appliances
- c) The value of evidence in targeting fire safety and cost recovery or litigation
- d) The importance in recognising diagnostic features of appliance and electrical fires

There is also an opportunity to participate in a workshop concentrating on electrical fires, to be held on Wednesday 17th August 2005.

CALL FOR PAPERS:

A second call for 20min papers has been made under the following topics:

1. Vehicle or machinery electrical fires
2. Case studies involving an electrical fire

Please contact the newsletter editor for a copy of the full brochure.



IDIOM INVESTIGATION: Breaking Down the Lingo

By Dr Tamara Szynda

Ever had trouble understanding a forensic scientist, police officer or lawyer? Never fear! Tamara is here to analyse the jargon for us.

Fingerprints



A fingerprint, or fingermark is the mark left behind when one of the inside surfaces of a digit touches an object. These marks are in the shape of complex patterns that are created from the friction ridge skin. This distinct type of skin (also known as papillary skin) consists of minute ridges with the depressions between ridges termed sulci. Friction ridge skin is also found on the palms of the hands and soles of the feet, creating palm prints and soleprints respectively.

There are three types of fingerprint evidence:

Indented fingerprints - or moulded fingerprints, which are produced when a finger comes into contact with a malleable substance that retains a three-dimensional image of the print.

Visible fingerprints - can be formed either by the finger removing surface material (such as dust) from an object, creating a negative image of the print, or where the finger has been contaminated with a substance (such as blood, ink, paint, etc) and this has been deposited on a surface through subsequent contact, creating a positive image.

Latent fingerprints - are present, but invisible. They consist of a deposit of natural skin secretions in the shape of the friction ridge pattern.

Thank you to Shaheen Aumeer-Donovan for this contribution

Law



Subpoena - A subpoena is an official form issued by a Court required the person named in it to come to the court and do something when they arrive. That something is either to give oral evidence, to give something to the Court (eg. documents, a knife), or both. An eyewitness may be given a subpoena to attend at a trial to testify as to what they witnessed. A bank may be subpoenaed to produce bank statements to a Court so that during a trial there is evidence as to payments of money.

Subpoena is an English word coming from 2 Latin words meaning "under penalty." Disobedience to a subpoena is disobedience to a Court order, which will lead to a penalty being imposed.

The plural of subpoena is 'subpoenas'. If subpoena were a Latin word, then the plural would be subpoenae, but it's an English word and so the plural is formed by adding an 's' at the end rather than an 'e' as in Latin. Many, many people get this wrong, including many lawyers.

Possible synonyms (depending on the jurisdiction from which the official form emanates) are 'writ,' 'summons,' 'notice of attendance,' and 'court attendance notice.' Note that in particular if lawyers hear 'writ' or 'summons' they will not normally first think that what is being referred to is a subpoena – but what those terms mean is for another time!

Thank you to Philippe Gray-Grzeszkiewicz for this contribution

Microscopy



Dissecting microscope - is a simple instrument which both illuminates and magnifies the object being observed, by around 10 to 40 times.

Light microscopy - the use of a compound light microscope, an instrument that produces magnified images of structure invisible to the naked eye. The instrument uses visible light that is directed through a variety of lenses to both magnify and direct the image of the object being examined into the eyepiece for observation. The level of magnification is usually between 40 to 1000 times that of life size.

Electron microscopy - the use of either a scanning (surface images seen when an electron beam bounces off the surface of material being examined) or transmission (electron beams transmitted through very thin sections of material less than 10⁻⁹ nanometres in thickness) microscope which uses a beam emitting electrons from an electron gun to produce images of very high magnification between 3000 to 100,000 or more that of life size.

Expert contributions are gladly accepted - Please send your definitions to:

Tamara.Szynda@uts.edu.au



Nomination Form for NSW Branch Committee 2005



NSW Branch of the ANZFSS

AGM 2005

COMMITTEE NOMINATION FORM

3.3 Election of Members:

- (1) Nominations of candidates for election as office-bearers of the association or as ordinary members of the committee -
 - (a) shall be made in writing, signed by two members of the association and accompanied by the written consent of the candidate (which may be endorsed on the form of nomination); and
 - (b) shall be delivered to the secretary of the association not less than 7 days before the date fixed for the holding of the annual general meeting at which the election is to take place.

I being a financial member of the ANZFSS, accept this nomination for the position of

Signed.....

Proposed by..... Seconded by.....

Please either photocopy or cut out this form, fill it in, have it endorsed by two other financial members, and bring it along to the AGM. We look forward to seeing you there!

Contact Details

If you have any query, comment or suggestion about this newsletter or any information contained within, please do not hesitate to contact us. *All correspondence regarding general enquiries, membership renewal, payment etc, can be addressed to:*

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Editor: shaheen.aumeer@uts.edu.au

Specific recipients (eg. the President, Treasurer, Membership Officer, etc.) can be reached C/o the details above.

Website:
<http://www.nifs.com.au/ANZFSS/ANZFSS.html?Index.asp&1>

Your Committee:

- President:** Claude Roux
- Vice President:** Kirsty McAllister
- Treasurer:** Peter Jamieson
- Secretary:** Sarah Robinson
- Merchandise:** Alison Sears
- Newsletter Editor:** Shaheen Aumeer-Donovan
- Memberships:** Aldo Severino
- Public Officer:** Allan Hodda
- Committee Members:**
 - Donnah Day
 - Michael Dawson
 - Denise Donlon
 - Samantha Furlong
 - Shirleyann Gibbs
 - Eric Murray
 - Samantha Stewart
 - Meiya Sutisno
 - Tamara Sztynoda
 - Ross Vining
 - James Wallman
 - Ian White

Final Words:

*“No amount of experimentation can ever prove me right; a single experiment can prove me wrong”
Albert Einstein (1879 - 1955)*