



# Australian and New Zealand FORENSIC SCIENCE SOCIETY



August 2005  
Issue 14

## Inside this Issue:

Message from the President	2
New Committee Member Profile: Kirsten Adelstein	3
REVIEW: June Meeting "Explosion Investigation" by David Pearson	3
REVIEW: July Public Forum "Inside the Forensic World"	4-5
<b>Next Meeting: 17 August 2005</b> <b>"Forensic Podiatry"</b> by Jill Fogarty	6
September Public Event: "Murder in Anna Bay - How Forensic Investigation Solved the Murder of Judith Brown" by Det Sgt Peter Fox	6
Future Meetings	6
Idiom Investigation: Breaking Down the Lingo By Donnah Day	7
Reminder of NSW AFI Conference	8
Fire Fatality Caused by a Ford Cruise Control Disconnect Switch	8
Was it Funny?	8
Newsletter by Email	8
Contact Details	8

**Please find enclosed your  
brochure for the upcoming  
September Public Event**

## **NSW Branch Newsletter**

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

### **LAST CHANCE - Membership Card Competition**

A final reminder to send us your entries for the 2006 membership card competition as you could win an ANZFSS T-shirt. The competition closes on 31st August. For more information consult previous newsletters or contact the Editor.

### **Welcome to New Society Members**

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

Hayam & Hebah ABDALLAH  
 Renee DEVER  
 Virginia FRIEDMAN  
 Edie-Lee IRGA  
 Shaylee JOHNSON  
 Michelle LEAHY  
 Tatiana PLUSCH  
 Emma ROLPH  
 Louise SHEWAN  
 Karen & Nicole SWINDAIL



### **ICE - "In Case of Emergency"**

An interesting and innovative idea has emerged in the wake of the recent London bombings. A campaign has been launched by the East Anglia Ambulance Service in conjunction with the Falklands veteran Simon Weston to use mobile phones as an aide in contacting loved ones in an emergency situation.

The idea is that you store the word "ICE" in your mobile phone address book, and against it enter the number of the person you would want to be contacted "In Case of Emergency". For more than one contact name ICE1, ICE2, ICE3 etc.

In an emergency situation police, ambulance, other first responders and hospital staff will then be able to quickly find out who your next of kin are and be able to contact them.

Although a campaign has not been formally launched in Australia, it seems like a good idea to me! Please spread the word so that In Case of Emergency, we can all have our loved-ones contacted straight away. Thank you very much to Inspector Ross Brogan for passing this information to us.



## Message from the President

Dear ANZFSS members,

I was invited a few weeks ago to give a presentation at the UTS Library entitled "From the Crime Scene to the Courtroom: Removing the Hollywood Hype, What is Forensics all about?". After this seminar, I was asked to write a short story on the same theme in the UTS magazine called U: I was then surprised when this innocent article was picked up by the media and I was bombarded by requests for radio interviews. This led to another story about education, including an appearance of our long-serving member and past committee member Michael Dawson and other people on Channel 10 night news.

I thought you would be interested in reading this article, which is reproduced here with the permission of the editor (slightly edited version of U: Magazine, Issue 4, 6 June – 1 August 2005):

*Finding a forensic free night on television these days is a real challenge. Popular culture has embraced forensic science with an almost obsessive fervour. Judging by the TV guide, the public just can't get enough. Crime shows have become synonymous with forensics – it provides the magic solution to catching a culprit. While the limelight brings positive benefits to the discipline, it also brings new challenges of increased scrutiny and higher expectations.*

*In the USA, forensic scientists and legal commentators have raised some serious issues caused by what they called the CSI effect. In Australia, anecdotal evidence also supports its existence. The CSI effect refers to the general public's unrealistic expectation of the capability of forensic science. This becomes a serious problem when it affects actual investigations.*

*In this context, sound education has become crucial. And in fact a more positive aspect of the CSI effect is the high level of interest in forensic science among school students, though I don't believe this interest is completely attributable to TV shows.*

*So where is real forensic science heading? Although miles away from Jerry Bruckheimer's productions, the discipline is expanding at a rapid rate. A smarter, more innovative and more systematic use of science to fight crime and terrorism constitutes a worldwide trend.*

*In particular, one of the novel approaches whose implementation has been accelerated by tragic events such as September 11 or the Bali bombings is the shift of analytical procedures from the laboratory to the crime scene. By doing so, modern forensic science is able to provide a quick, if not real-time response. The benefits for law enforcement and national security are obvious. But the need for a quicker forensic response is somewhat traded off*



*The cast of popular TV Show CSI*

*against the results reliability. Results obtained this way are certainly acceptable in an intelligence or tactical context, but most still require confirmatory laboratory tests to stand up in court. It is believed that current and future technological advances will fill the gap and an increasing number of tests with an acceptable degree of reliability will be applied at the scene in the near future.*

*Similarly, the value of integrating the laboratory sciences with other dimensions of the investigative process has recently been highlighted by research in an area known as 'forensic intelligence'. The combination and integration of these two related emerging fields (i.e. portable technologies and proactive use of forensic data) will undoubtedly change the face of forensic science.*

*For scientists, there are exciting times ahead. After all, some of the solutions imagined by writers of forensic TV shows, might be just around the corner.*

### The CSI effect

- **Police officers** expect miracles from forensic specialists. Increasing requests for forensic testing contribute to significant backlogs (forensics can provide the answer).
- **Prosecutors** extrapolate the meaning of forensic evidence (I am not saying it, the scientist says it).
- **Defence barristers** question experts' judgment even when confronted by reasonable limitations (why wasn't it tested?)
- **Juries** expect to see a fingerprint or DNA in every case and if they don't exist juries accept other less probative types of evidence (and the suspect is always in the database).
- **Victims'** struggle with the fact that forensic testing can be a lengthy and not always definitive process (how can it take so long for such a result?).



**Claude Roux**  
President  
July 3rd, 2005



## New Committee Member Profile: Kirsten Adelstein

Kirsten has obtained her Bachelor's Degree in Science from the University of Sydney, and has just completed her Masters Degree in Forensic Science at the University of Western Australia. During her post-graduate studies, Kirsten conducted her research at the University of Technology, Sydney as a Visiting Scholar. Her topic of research was in the area of GSR (Gunshot Residue) and Environmental Particle analysis. Kirsten has been interested in Forensic Science since she was 10 and considers herself very lucky to have had work experience in the area, including some time with the Western Australian Police as a Scene of Crime Officer (SOCO).



*Kirsten Adelstein*

She enjoys spending her spare time with friends and family. Kirsten is an avid book reader especially in the fantasy and history genres. She enjoys scuba diving, trapezing, and cooking dinner for friends.

Kirsten is also one of our newest committee members, and we welcome her input and assistance with organising upcoming functions.

## REVIEW: "Explosion Investigation" by David Pearson ANZFSS Meeting, Wednesday 22nd June 2005

Mr David Pearson kindly agreed to present to us some information on the forensic investigation of explosions. Explosions occur less frequently than fires, but can cause significant damage. David explained what an explosion is, what causes explosions, and what the differences between the types of physical and chemical explosions are, with many examples from explosions around the world to illustrate. One such interesting example included an explanation of the mechanism of a blast wave including a pressure wave exerted on the environment, plus back suction.

David then described the methodology for investigating explosions, including safety concerns and what to look for in different types of explosions. One example was of a condensed phase detonation such as the Oklahoma bombing. In this case the investigators look at the crater and degree of damage and debris away from the explosion. They look for electrical equipment in a terrorist bombing, such as batteries, phones, wires, nails, ball bearings. They look for chemical residues to determine the material that caused or contributed to the explosion. They look for displacement of items (although interpretation is essential as these may have been moved by emergency responders). This can include distortion or embedding of objects. They also try to locate the seat of the explosion(s). In the example of the Madrid train bombing it was clear because the crater was an obvious spherical shape.

David then presented two very interesting case studies. The first involved a "hot work" explosion at P&H Mine Pro, in Mt Thornley on the 23rd February 2002. Workers were arc welding a dipper handle when an explosion occurred, dislodging a steel plate which struck a worker, and sprayed hot grease on another worker. David took us through the sequence of events, questions arising from the incident, experiments conducted, and the conclusions drawn from the incident.

The second study involved an LPG fire and explosion at Boral in St Peters on the 1st April 1990. This example was of a BLEVE explosion, which was in fact the biggest explosion ever to occur in NSW. David explained what a BLEVE is, and the hazards associated with it. He described the particulars of the site that contributed to the problem, and was able to show us the sequence of events through some amazing professional and amateur video footage of the incident. He then went through the IRC judgement that ensued.

We would like to thank David for taking the time to compile this detailed and fascinating presentation for us.





## REVIEW: Inside the Forensic World ANZFSS Careers Information Day, Saturday 16th July 2005

This year's IFW was a wonderful opportunity for those considering a career in forensic science to hear first-hand what it is like to be a forensic scientist. Thank you very much to the organisers, chairpersons, speakers and audience for their time and effort in making IFW once again a huge success.

The students were able to see an array of conference posters, several booths from Universities offering forensic science courses, ANZFSS merchandise, and this newsletter (yay!). We were pleased that Mr James Finger was able to take time out of his busy

schedule to set up some of the interesting displays he has been taking on the road as part of an exhibition for school children. Our thanks also go to the many and varied forensic scientists who were happy to answer questions candidly.



The meeting was formally opened by our lovely Vice President, Ms Kirsty McAllister.

*Ms Kirsty McAllister  
Vice President  
NSW ANZFSS*

### Session 1: "Chasing Clues"

Chair: *Mrs Shaheen Aumeer-Donovan*



Dr Jo DuFlou was the first speaker. He explained what a forensic pathologist does and does not do and the role of the Coroner. Dr DuFlou showed the facilities at the Department of Forensic Medicine in Glebe and the types of operations they are involved in. He explained the purpose of an autopsy and what it involves, and lamented the fact that he missed out on seeing the alien autopsy when he visited Rockwell in the United States. Dr DuFlou described some of the features apparent in an autopsy that might indicate natural death from heart attack or inherited diseases, accidental death, drug overdose, suicide, or homicide. He explained how an autopsy can assist in solving crimes, as well as some of the negatives and positives of his job.

The second speaker, Det Sgt Phil Pearce, gave the audience an idea of what it was like to work for the NSW Police Forensic Services Group (FSG). He described the make-up of the FSG and the different unsworn officer positions. Det Sgt Pearce spoke about the usual types of responses from the FSG, and some special cases such as the recent Bali and Thailand responses. He then outlined the career opportunities as a scientific officer with the FSG and the particular qualities required for the job.

Dr Kris Illingsworth rounded off this session with her expertise in Criminal Investigative Analysis (CIA), commonly known as "profiling". She began by explaining how behaviour reflects personality, and that evidence of behaviour at the crime scene can correlate directly to the offender's personality. Dr Illingsworth described verbal, physical and sexual behaviours that may be seen at a crime scene and

which types of offender characteristics and traits may be evident in those behaviours. CIA may be used for different purposes including investigative and interview strategies, false allegation and threat assessment. Dr Illingsworth explained the types of crimes in which CIA is of value and the case materials useful to the profiler. She then showed how a person can become a criminal profiler and the different career opportunities.



*"Chasing Clues"  
Det Sgt Phil Pearce, Mrs Shaheen Aumeer-Donovan,  
Dr Kris Illingsworth (above left)  
& Dr Jo DuFlou (above right)*



*"Blood & Bones"  
Ms Kirsten Adelstein, Ms Christie Wallace,  
Dr Tony Raymond & Mr Allen Williams*



## REVIEW: Inside the Forensic World ANZFSS Careers Information Day, Saturday 16th July 2005 ... Continued from Page 4

Session 2: "Blood & Bones"  
Chair: Ms Kirsten Adelstein



Mr Allen Williams began this session with an overview of the Australian Federal Police Computer Forensic Team (CFT). Surprisingly, despite the rapid growth of cyber crime, at present there are only 12 investigators in Australia. This section will soon be expanded, and the AFP are hoping to recruit both forensic experts to train in computer technology, and computer experts to train in forensic science. A CFT member has a Top Secret security clearance due to the nature of their work, and will assist investigators where there is a need to examine electronic evidence. Mr Williams described the types of clients they have, and the services they provide. He explained the processes involved in the investigation and the different types of crimes they investigate, and illustrated this with some case examples.

Ms Christie Wallace then spoke about forensic chemistry and how she became a forensic chemist. She described her role as a Scene of Crime Officer (SOCO) and member of the Forensic Armed Robbery Unit (FARU) with the FSG. Ms Wallace then elucidated the different forensic chemistry jobs within the FSG, including fingerprint, field, explosives, firearms, drugs and other chemists. This very interesting presentation included many illustrations and case examples that were greatly appreciated by the audience.

Dr Tony Raymond gave us insight into blood spatter analysis. He began by explaining the fundamental principles involved in blood spatter formation and the approach to examining such evidence. Dr Raymond described the scenarios in which this could assist in crime scene reconstruction, and the types of questions that could be answered. He went on to show how the basic principles of science can be applied to the analysis of blood spatter, including Newton's Laws of Motion, gravity, air resistance, and the properties of a fluid. In addition, Dr Raymond illustrated typical blood stain patterns with case examples.



"Silks & Scholars"  
Dr Glen Porter (left)  
Dr Tamara Sztynnda,  
Mr Paul Conlon, Ms Lisa Mingari  
& Dr Michael Dawson (right)

Session 3: "Silks & Scholars"  
Chair: Ms Lisa Mingari



Mr Paul Conlon began this session by providing the law perspective of the importance of forensic science in eliminating the need for eyewitness testimony which is unreliable if available at all. Mr Conlon presented two fascinating Australian murder cases in which different areas of forensic science were used to establish the sequence of events and contribute to conviction of the offenders.

Dr Michael Dawson then demystified forensic science a little for the audience. He started with the broad definition of forensic science and some quotes describing the objectives of forensic science involvement. He then explained how the popular CSI-style TV shows differed from reality, including such myths as: the same people do everything from crime scene analysis to catching and arresting crooks; forensic scientists get results in real time; resources are infinite; everything can be analysed; science is infallible; in every case there is a fingerprint or DNA; the suspect is always in "the database"; and that students' interest in forensic science stems from the TV shows. Dr Dawson then disproved Claude Roux's theory that not all forensic scientists are good-looking young females!

Dr Tamara Sztynnda (UTS) and Dr Glen Porter (UWS) then outlined the courses and facilities available at the two major universities offering forensic science tertiary education in NSW.

In conclusion, the careers day was once again a huge success and enjoyed by all. Thank you once again to everyone involved.





## NEXT MEETING: "Forensic Podiatry" by Jill Fogarty

**DATE:** Wednesday, 17th August 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



*Something you haven't seen on CSI or possibly didn't know about ... You can be identified by your feet!*

Podiatry has been a profession for a hundred years, with its practitioners known as chiropodists prior to its professional name change in the latter part of the twentieth century. Many people are likely to have regarded it as a resource for aching feet, bunions and ingrown toenails, but that is only part of the more visible commercial side of the discipline.

This meeting will introduce one of our members with a very particular slant on podiatry. Jill Fogarty is a forensic podiatrist who has specialized in this work over the past fifteen years. She has been involved in a range of interesting cases where her knowledge of certain footprint and footwear presentations has con-

tributed to the understanding and interpretation of crime scene evidence. You may be surprised by the depth of information that is revealed about people from evidence left by naked or shod feet!

Over the years that Jill has been specializing in this field she has presented many forensic reports and attended many trials as an expert witness. She has been subjected to intense cross examination and extensive scrutiny of her work and conclusions. This is your chance to hear about her experiences and ask her questions ... after being grilled by courtroom prosecution and defence barristers, the ANZFSS meeting attendees are unlikely to phase her! She has some fascinating tales to tell ... don't miss this opportunity to learn about this intriguing discipline.

*Thank you to Jill & Shirleyann for this Intro*

## SEPTEMBER PUBLIC EVENT: "Murder in Anna Bay - How Forensic Science Solved the Murder of Judith Brown" by Detective Sergeant Peter Fox

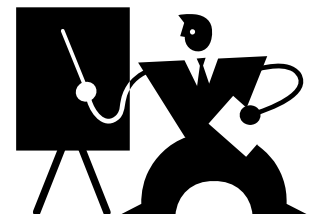
**DATE:** Friday, 30th September 2005  
**TIME:** 7:30pm  
**VENUE:** University of Technology, Sydney  
**COST:** \$10 for members, \$20 for non-members

*Please see the enclosed brochure for further details.*

## FUTURE MEETINGS

**Please be aware of the following upcoming meetings:**

**MEETING:** Falconbridge Murders / Cot Deaths  
**SPEAKER:** Bernie Ryan  
**DATE:** Wednesday, 26th October 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



**MEETING:** Annual Dinner / Talk  
**SPEAKER:** Peter Ellis  
**DATE:** Friday, 25th November 2005 (tentatively - depends on availability)  
**TIME:** TBA  
**VENUE:** TBA (Parramatta area)  
**COST:** TBA (cost for dinner)



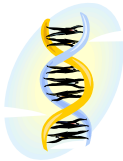
## IDIOM INVESTIGATION: Breaking Down the Lingo

### By Donnah Day

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

#### DNA:

**Mitochondrial DNA** – this is the DNA found in mitochondria inside cells in the cytoplasm, but not in the nucleus. Mitochondrial DNA can be recovered some time after death. It has been used in the examination of very old remains including mummies. Mitochondrial DNA can be used to trace a maternal line since all mitochondrial are inherited from the mother. Plants also have mitochondria, as well as DNA elements in their chloroplasts.



**Electrophoresis** – An electrical current is used to separate different sized fragments. The smaller fragments travel more quickly than the larger fragments. DNA molecules are negatively charged and so travel toward the positively charged cathode in electrophoresis resulting in a number of bands of like sized fragments which can be compared to a known size control, or ladder, which is run concurrently.

#### PATHOLOGY:

**Deaths by Asphyxia** – death by asphyxia can occur through any number of circumstances. The most common are:

- **Strangulation** – direct strangulation involves the choking of a person either manually (with hands) or mechanically (with a ligature). It can also occur through such means as Judo moves, use of forearms or legs, and use of instruments employed in combat to restrict air flow or to render an assailant unconscious by cutting of the supply of oxygen to the body.
- **Hanging** – incidents of hanging are usually suicidal or accidental, as in autoerotic deaths. A body need not be completely suspended in order to suffer asphyxia.
- **Drowning** – this is the direct result of liquid entering the breathing passages, preventing air from going to the lungs. A person need not be submerged to drown. As long as the mouth and nose are submerged in any type of liquid drowning will occur.
- **Inhalation of poison gases** – the most common type of asphyxia. Results from breathing in certain chemicals such as carbon monoxide.
- **Suffocation** – or smothering, occurs when the passage of air through the mouth and nose is blocked. The mechanisms vary and may include hands over the mouth and nose, a pillow forcibly compressed over the face or a plastic bag, gag or other obstruction forced in to the mouth. Cave-ins where a person has dirt, sand or other powdery material blocking the mouth nose and airway are also suffocations.



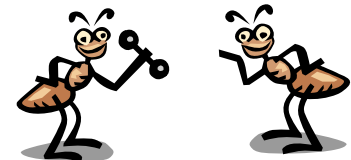
#### ENTOMOLOGY:

**Instar** – the growth stage of a larvae. In blowflies there are generally three; the first instar, the second instar and then the third instar.

**Wandering** – wandering larvae are those larvae which have finished feeding and begin to move away from a corpse in order to find a suitable place to burrow and pupate. Wandering larvae and puparia can be found some distance away from a corpse. Note: not all forensically important insects do this.

**Pupae** – the chrysalis the larvae form for metamorphosis. It is similar to a butterfly's.

**Emergence** – the process of new adults emerging from the pupa.



**Spiracles** – the breathing apparatus of larvae. These are often found at the posterior end, ie the bottom, so that the larvae can breath whilst continuing to feed.

**Expert contributions are gladly accepted - Please send your definitions to the Editor**



## Reminder of NSW AFI Conference

Electrical Fires - The Shocking Truth: The Investigations of Appliance & Electrical Fires

**DATE:** 18th - 19th August 2005

**VENUE:** Carlton Crest, Sydney



## Fire Fatality Caused by a Ford Cruise Control Disconnect Switch

Inspector Ross Brogan has sent some information on a case in the USA that involved a fatal fire caused by the cruise control disconnect switch in a Ford Pickup. The notice came from FIAA director and principal of Western Canadian Mechanical Investigations, Keith Fowler, who worked on the case. There are 16



million potentially affected vehicles, so the risk is wide-spread. A story on this case was run on CNN in June. For more information, please contact the Editor.

## Was it Funny?

Apparently it was a little difficult to see the "joke" in this image from the last edition of the newsletter. [Now, if you are an email subscriber, you would have been able to zoom in and read the fine print - yet another bonus for receiving the newsletter by email!]. For the rest of us, Aldo has kindly pointed out the writing at the bottom of the sign. Thanks Aldo!



ALSO, THE BRIDGE AHEAD IS OUT

## Newsletter by Email

If you would like to receive the newsletter by email, please send me an email indicating your name, membership number, and the recipient email address. shaheen.aumeer@uts.edu.au

## 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:*

NSW Branch ANZFSS  
PO Box 207  
Lidcombe NSW 1825

**Phone:** 02 9646 0222  
**Fax:** 02 9646 0333

**Email:** anzfss.nswsec@nifs.com.au  
**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:

<b>President:</b>	Claude Roux
<b>Vice President:</b>	Kirsty McAllister
<b>Treasurer:</b>	Peter Jamieson
<b>Secretary:</b>	Lisa Mingari
<b>Merchandise:</b>	Alison Sears
<b>Newsletter Editor:</b>	Shaheen Aumeer-Donovan
<b>Memberships:</b>	Aldo Severino
<b>Public Officer:</b>	Allan Hodda
<b>Committee Members:</b>	Kirsten Adelstein
	Donnah Day
	Denise Donlon
	Shirleyann Gibbs
	Aaron Heagney
	Eric Murray
	Sarah Robinson
	Meiya Sutisno
	James Wallman
	Ian White

### Final Words:

"It must be remembered that the purpose of education is not to fill the minds of students with facts... it is to teach them to think"

- Robert M. Hutchins