



Australian and New Zealand FORENSIC SCIENCE SOCIETY



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Issue 5

Inside this Issue:

25th AUGUST MEETING:
"Nuclear Fingerprints" - The
Role of Nuclear Forensic
Science in Preventing
Nuclear Materials Falling into
the Wrong Hands
- Michael Colella 2

04th SEPTEMBER
AFI MEETING:
Recording Techniques &
Safety at Fire Scenes 2

REVIEW of AFI MEETING:
Fatal Fire Investigation:
From Fire Scene to
Post Mortem 3

REVIEW of INSIDE THE
FORENSIC WORLD 4

Contact Details 6

A Merchandise Order Form
is included on page 7 of this
newsletter. If you wish to
purchase something, please
detach the completed order
form and return it to us.

NSW Branch Newsletter

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

From the Editor

You will notice there is no message from Claude in this edition - He's on holiday at the moment (some people have all the luck!) but don't worry, we'll have more thought-provoking words from him next month.

If you know of an up-coming forensic event that you believe will benefit the NSW Branch, or you have been to an event and would like to submit a review, please drop me an email; The more information we have to pass on, the better our committee can cater for you!

shaheen.aumeer@uts.edu.au

- Ed

Farewell to Samantha



Not another committee member leaving us!!

Samantha Furlong was a new committee member this year, and is moving back to Melbourne on the 18th August.

Samantha will join the Victorian Branch of the ANZFSS, and we know she will be a valuable contributor there.

All the best for the future!! We'll miss you!

NIFS Has Moved

The National Institute of Forensic Science has moved to:
Level 1, 283 Queen Street, Melbourne.

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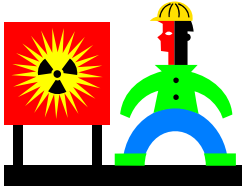


Please update your address book!



NEXT MEETING: "Nuclear Fingerprints" - The Role of Nuclear Forensic Science in Preventing Nuclear Materials Falling into the Wrong Hands - Michael Colella

DATE: Wednesday, 25th August 2004
TIME: 6:30pm for nibbles, 7:00pm start
VENUE: Institute of Forensic Medicine, Glebe
COST: Free to members, \$5 for non-members



The ANZFSS NSW Branch is pleased to introduce Michael Colella from ANSTO, who will talk to us about his involvement in Nuclear Forensics.

Michael Colella is a Research Chemist for the Australian Nuclear Science & Technology Organisation (ANSTO). Since joining the organisation in 1988, he has worked in several fields, including R&D in radiopharmaceuticals, nuclear waste forms and nanocomposites. During this time, Michael has gained extensive and unique experience in the microanalysis and characterisation of nuclear materials.

Recently, Michael was assigned to the National and International Safeguards and Security Research project in which he is undertaking nuclear forensic characterisation of particulate materials and technique developmental work.

Michael earned a Bachelor of Science degree (1993) and a Master of Science (2002) degree in Chemistry from the University of Wollongong. He is presently enrolled in a doctorate degree at the University of Technology Sydney in the field of nuclear forensics. Michael currently has more than 20 refereed publications mostly in characterisation of nuclear materials, materials science and mineralogy.

Cases of illicit trafficking that involve nuclear and other radioactive materials continue to be reported. Over the past decade, there have been 540 illicit trafficking cases have been confirmed worldwide, with a further 300 currently under investigation.

Most of the cases have a criminal dimension even if not for known terrorist purposes. The events of September 11 and the interest expressed by terror networks in acquiring nuclear and other radioactive materials, reminded us of the need to prevent these materials from ever falling into the wrong hands.

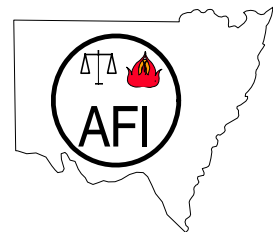
Much has been learned from analysis of reported cases. What is the nature of the seized material (enrichment, composition, age, etc.)? What specifically could the material be used for? Where was the material obtained, from facilities, scrap or waste? Was the amount of seized material only a sample of a much more significant quantity? These and other questions can be answered through detailed investigation of the seized material.

The scientific methods used for this purpose have led to the emergence of a new and unique discipline known as nuclear forensics. It has become integral component in any investigation involving illicit trafficking of nuclear and other radioactive materials.

This presentation will introduce the audience to some fundamental attributes of radioactivity, nuclear forensic principles and where possible illustrated with case studies.

NSW ASSOCIATION OF FIRE INVESTIGATORS MEETING Recording Techniques and Safety at Fire Scenes

DATE: Thursday 9th September, 2004
TIME: 6:30pm for refreshments
VENUE: Ryde Eastwood Leagues Club, Ryedale Road, West Ryde
COST: Free for ANZFSS Members
BOOKING: Essential to ensure a place: contact Ross Brogan by email: Ross.Brogan@fire.nsw.gov.au
SPEAKER: **Carl Cameron** - Former head of NSW Police Physical Evidence Section & now Forensic Consultant to NSW Police Forensic Services Group.



The speakers will involve you in fire investigation, showing the methodologies and techniques used at the fire scene investigation, through the eyes of the practitioners, to assist you with the correct recording of the evidence at hand. Professionally and accurately recorded scenes lead to successful conclusions. Correct safety procedures adopted at the scene ensure that you are on hand to handle the next case that comes along!



REVIEW: Fatal Fire Investigation, From Fire Scene to Post Mortem NSW Association of Fire Investigators Meeting, 1st July 2004

This review was kindly prepared by Glenn Wilcher, Forensic Technician at ICPMR.

The Fire investigators Meeting held July 1st, at the Ryde Eastwood Leagues Club. It was one of the most successful evenings this year - in excess of 110 people attended. The audience consisted of a wide multidisciplinary cross section of the forensic professions, including forensic and mortuary science students, trainee fire investigators, and forensic academia.

The topic of the meeting was the role of the Fire Officer and Forensic Pathologist in Fire Fatalities, with presentations given by Ross Brogan, Fire Officer, and Dr Peter Ellis, Forensic Pathologist and Director of the Department of Forensic Medicine, Westmead Hospital.

The presentation included an actual case history of a mass fire fatality in 1995, investigated by the Westmead Deputy State Coroner. The residential unit fire occurred at Speed St Liverpool, and resulted in seven fatalities. The incident was classified as a disaster and DVI protocols were followed. The cause of death was determined as incineration and toxic cyanide poisoning due to combustion of furniture. There was conjecturable evidence with respect to the toxicology findings, particularly the carbon monoxide and hydrogen cyanide levels.



Both presentations discussed a wide range of material including the role of the Coroner, the DVI process, methods of identification, factors to consider in the systematic approach to fire investigation, and post mortem changes associated with fire deaths. Ross Brogan detailed the role of the fire officer at the scene of fire fatalities; they conduct reconnaissance of the scene, preservation of evidence (especially dental evidence), and maintain safety at the scene with respect to other investigators. Ross Brogan outlined the difficulties in locating deceased persons in fire debris.

He explained the process of assessing the scene and the approach taken for entering the property, examining each room, identifying various 'fire scene markers' such as the distribution of smoke patterns in the environment and burn patterns of structures that provide a 'story' of the circumstances. The importance of scene photography was emphasised, as well as approaching the task in a systematic fashion from the external areas and entering the building, photographing each step along the way internally to create a panoramic view of the area. This enables a holistic interpretation of the evidence.

The speakers detailed the Coroners role with respect to Section 15 of the Coroners Act, and the Pathologist role under Section 48/49 of the Act in identification of the deceased, and determining cause of death, mode and manner of death. Mention was made that Coroners investigate any fires where there is damage to property, that you do not have to have a deceased person for coronial intervention. Dr Ellis detailed the role of the Forensic Pathologist in assessing the scene of the fire and illustrated the types of heat injuries they might see, such as classifications of burns, gross appearance at autopsy such as the pugilistic stance due to flexor muscle contractures, heat fractures which can be mistaken for blunt trauma with inexperienced investigators, frothiness associated with pulmonary oedema, and burn patterns such as liquid pour patterns. This enables interpretation of events such as a person pouring accelerant on someone, or through an environment. Smoke inhalation may be a cause of death, potentially by inhalation of carbon monoxide, presenting the characteristic cherry pink colouration. In addition to CO, hydrogen cyanide, nitrites, sulphites, acids, aldehydes and isocyanates may be inhaled due to the combustion of furniture.

Methods of identification were detailed for when visual and fingerprint identification is not feasible; such as odontology; radiographic identification; and in the event of no antemortem data for comparison, the coroner determines identification on the balance of probabilities.

Overall this was a very informative evening covering a wide range of subjects related to fire investigation and forensic medicine aspects of fire investigation.



REVIEW: Inside the Forensic World 17th July, 2004

This year's IFW was once again an excellent display of what forensic science has to offer those contemplating a career in the field. Many thanks to the organisers, chairpersons, speakers and audience for giving up their Saturday to make the meeting such a success.

Session 1: "Chasing Clues"

Chair: Mr Eric Murray

Det. Sgt. Karen Webb was the first speaker. She introduced the topic of Crime Scene Examination, and talked about the location and jurisdiction of the Forensic Services Group (FSG). She went on to describe the functions of the FSG with respect to crime scene investigation, giving examples of crime scenes and techniques used. Det. Sgt. Webb gave an overview of the different fields, and outlined the potential career routes into the FSG and Forensic Science in general.

The second speaker, Mr John Connell, gave the audience an idea of what it was like to be a Scene of Crime Officer (SOCO). He explained the role of the SOCO, with reference to particular activities that he performs on a regular basis. Mr Connell then presented an example of a motor vehicle break/enter/steal, and described the process he would be required to undertake. He then detailed how to become a SOCO.

Mr Michael Jackson rounded off this session with his expertise on firearms and ballistics examination. He began with the case of a travelling bus being fired on from a car. He then took a step back and talked about the types of ballistics: internal ballistics and the functioning of the gun; external ballistics and factors affecting the trajectory of the bullet; terminal ballistics and the interaction of bullet and target; and intermediate ballistics which involves things like estimation of distance fired. After this in-depth discussion, Mr Jackson returned to his example, explaining how examination involving the different areas of ballistics lead to the conclusions formed in the case.

Available to the students was an array of conference posters, several booths from Universities offering Forensic Science courses, ANZFSS Merchandise, and a host of Forensic Scientists to answer those "burning questions". The meeting was opened by our lovely Vice President, Ms Kirsty McAllister.



"Chasing Clues" - Mr Michael Jackson, Det. Sgt. Karen Webb & Mr John Connell



Profile of an Audience Member

Victim: Sten Tirums

School: Oakhill College, Castle Hill

Grade: Year 10



Sten came to IFW because he was "just interested". He likes the idea of working in a scientific field, but after today, he's not so sure that Forensic Science is for him (I don't think he liked the idea of working with bugs and dead people - I don't really blame him there!). Sten seemed to get the impression that there weren't many jobs in the field, but perhaps after seeing the graduate statistics presented in the "Silks and Scholars" session, he might have changed his mind on that one. He found most interesting the graphical images that demonstrated how the real world differed from TV depictions of Forensic Science. Good on you Sten, for having a chat to me, and I wish you the best of luck in the future.





REVIEW: Inside the Forensic World, Continued 17th July, 2004

Session 2: "Blood & Bones"
Chair: Ms Samantha Furlong

Dr Neil Langlois headed this session, explaining how he became a Forensic Pathologist, from reading Bernard Spilsbury to dissecting electrical equipment as a child, to undertaking a medical degree and gaining experience in several areas (luckily his pet cat survived the dissecting phase). He went on to explain who employs Forensic Pathologists and what kinds of cases they tend to see. He then detailed with case examples the types of responsibilities a Pathologist has, from autopsy, to inquests and court appearances.

Mr Allan Hodda then spoke about Forensic Chemistry. He described how he became a Forensic Chemist, his work at DAL/ICPMR, and how he didn't blow up that section of DAL (sure



"Blood & Bones" - Dr Neil Langlois, Dr James Wallman & Mr Allan Hodda

you didn't!). Mr Hodda then gave us some examples of chemistry in action, relating to a fibre analysis and a toxicology case. He stressed the importance of avoiding bias, citing the Splatt case.

Dr James Wallman (aka "the bug man") gave us insight into the world of a Forensic Entomologist. He explained how an Entomologist can study insects to help in law matters, for example, the identification of termites in a building after supposed extermination can help in a law suit. Dr Wallman then talked about using insects to determine time since death, using fly and beetle charts and their lifecycles. He then talked about fly infestation delay and how this can affect the estimation of time since death, and gave some case examples. Finally, Dr Wallman revealed how one becomes a forensic entomologist.

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Session 3: "Silks & Scholars"
Chair: Dr Shirleyann Gibbs

Mr Allan Hodda began with a presentation about law. He introduced the topic, talking about court structure and the differences between an adversarial and an inquisitorial system. He went through aspects of the evidence act, and spoke about the Frye and Daubert cases.



Profile of an Audience Member

Victims:
Saundra Van Prehn (left) & Kalai Valliappan
School: St George High School
Grade: Year 10



These lovely ladies were attracted to IFW because they are seriously considering a career in Forensic Science. After seeing our wares, they feel much more encouraged. They didn't realise that there were so many areas, and (unlike poor Sten) were quite fascinated by the "bug man" (our Dr James Wallman). Kalai is more inclined towards the Pathology area of investigation, whilst Saundra sees herself as more of a Toxicologist. I hope you continue to strive towards your goals, and one day perhaps you will be working alongside one of us! See you then!!





REVIEW: Inside the Forensic World, Continued

17th July, 2004

Prof. Michael Dawson then talked about Forensic Science from UTS. He explained what is involved in Forensic Science, and what is not. He gave an examples of a case and how different areas of Forensic Science can help to solve it. Prof. Dawson went on to discuss the facilities at UTS, statistics on the outcomes from graduates of UTS, and gave details about the UTS website.

Dr Paul Wormell and Mr Glenn Porter from UWS then addressed their new Forensic Science course and its breakdown into lab sciences, field

sciences, legal studies and electives. Mr Porter then talked about various techniques and equipment available at UWS, including a crime scene house.

Mr Simon Walsh finished the day with an inspirational talk on what it is to be a Forensic Scientist and a Researcher, and what Researchers can accomplish. His message was that you should not be afraid to follow your interests. Mr Walsh then detailed how you can do research following an academic pathway through University, and finally presented the many advantages of being a Forensic Scientist.



“Silks & Scholars” - Mr Allan Hodda, Prof. Michael Dawson, Mr Simon Walsh, Dr Paul Wormell & Mr Glenn Porter

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Final Words:

“What one knows is, in youth, of little moment; they know enough who know how to learn.”
- Henry Brooks Adams (1838-1918)