



Australian and New Zealand FORENSIC SCIENCE SOCIETY



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NSW Branch Newsletter

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

Final Renewal Notice for 2006

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.nswsec@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.

WANTED: Preferably Alive!

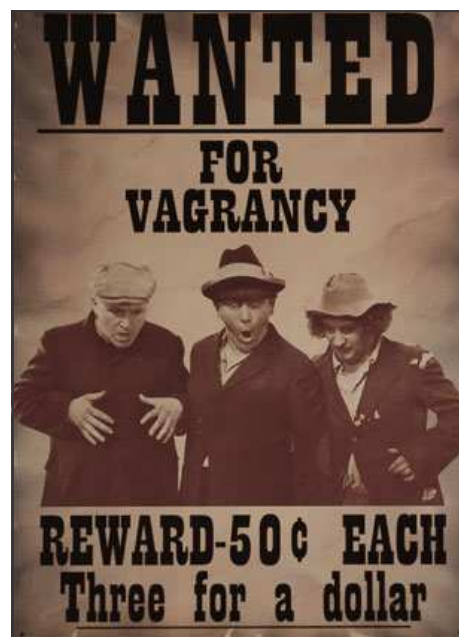
Put your skills in web page design to good use and volunteer to set up and maintain the ANZFSS NSW Branch website! If you have not visited the website yet, it looks fairly generic and only contains our contact details:

<http://www.anzfss.org.au/nsw/nswdetails.htm>

We would like someone to create an interesting (but professional) format, upload the newsletter each month and set up a section indicating the details of the next meeting so that it will be easier for members to look it up online.

Those interested should contact Shaheen and this will be discussed at the next Committee meeting.

shaheen.aumeer@uts.edu.au





Message from the President

Dear ANZFSS Members,

What a week for your Society! I am of course talking about the recent ANZFSS symposium in Fremantle. The symposium was a real success on every front and I take this opportunity to congratulate the WA Branch and the Organising Committee on a very fine symposium. There is a lot of hard work behind the scene and such a success is not designed overnight.

The week was also a success for our Branch. The level of participation of NSW members was fantastic. Not only many of our members made the trip to WA, but a large number of them also proudly presented their work on this occasion. If this was not enough, the NSW Branch was also awarded the privilege to organise the 2010 symposium, most likely in Sydney (the next symposium will be held in Melbourne in 2008). It sounds like this is a long time, however, I have no doubt that time will fly by and we will have to address many challenges along the way. The conditions for 2010 are ideal at this stage: there is no international symposium on forensic science during that year. Therefore, our main aim is to make the 2010 ANZFSS symposium the international focus for our discipline and professions. If you are a forensic scientist and are not in Sydney in 2010, everyone will wonder: *where the bloody hell are you?*

The recent symposium also provided an opportunity to discuss further options for our Society to become a professional society. It was very encouraging to see that the National Body and other stakeholders listened to negative comments from members. After all everyone works in the best interest of the Society. Most members would agree with the spirit of the proposed changes. However, a balance must be struck: how can we become a truly professional society without turning into an elitist club? This challenge is not impossible. For example, the American Academy of Forensic Sciences succeeded in this endeavour. There is no reason why we could not! Eventually everything will be determined by the details in the rules. The National President, Bill Crick, plans to visit the State Branches to explain and discuss this plan. In the meantime I would urge you to keep in touch with these developments and contact us if you have any question or comment.

I hope to see you soon...and don't forget to pencil down 2010!

Claude Roux
President
18th April, 2006



Congratulations to Alan Hodda - Lifetime Member

Congratulations to Alan Hodda for being elected as a Lifetime Member of the NSW Branch ANZFSS. Alan, we hope that you enjoy this small token of our appreciation for all the support and hard work you have done for the Society over many years.



Alan Hodda

Lost in Translation?





MEETINGS FOR 2006

This is an updated version of our meeting schedule. *Our next meeting will not be this year's scholarship winners as the unique opportunity arose to have a presentation by Dr Eric Lock from the Netherlands on drug profiling.*

Note that unless a firm notice is placed in the newsletter, these dates are **tentative**. Any change of date or venue will be sent to you through the newsletter ASAP. Hope to see you there!

Wednesday, 26th April	"The XTC Project - Stamping out Drugs in the Netherlands" By Dr Eric Lock
Wednesday, 17th May	TBA
Wednesday, 21st June	TBA
Saturday, 15th July	Inside the Forensic World
Wednesday, 16th August	TBA
Friday, 22nd September	Public Night
Wednesday, 18th October	TBA
Friday, 24th November	Annual Dinner & Talk TBA

NEXT MEETING: "The XTC Project - Stamping out Drugs in the Netherlands" by Dr Eric Lock

DATE: Wednesday, 26th April 2006
TIME: 6:30 pm for refreshments,
7:00 pm start
VENUE: Department of Forensic Medicine,
50 Parramatta Road, Glebe
COST: Free to members, \$5 for non-members

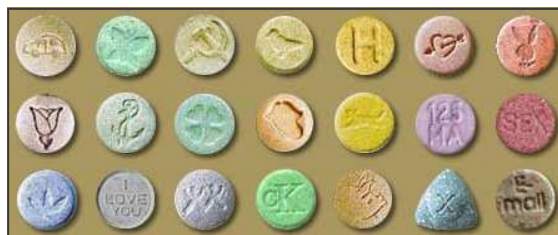
Eric Lock was born in Geneva, Switzerland almost 36 years ago to English parents. He grew up in Geneva and after high school went to Lausanne to study forensic science. He obtained his degree in 1995 from the School of Forensic Sciences of the University of Lausanne, Switzerland. He then worked there for seven years as a scientific collaborator (casework and research), part-time lecturer and researcher and later obtained his Ph.D. from the same University in 2005.

In 2003, he was appointed Senior Lecturer in Forensic Science and Analytical Chemistry in the Department of Forensic Science and Chemistry of Anglia Polytechnic University, Cambridge, UK and worked there for almost a year. But for the last two and a half years, he's been working as a research scientist in the Netherlands Forensic Institute in The Hague.

He has extensive experience in the analysis of drugs of abuse and has specialised for the last ten years in the profiling of illicit drugs, particularly synthetic illicit drugs. He has presented his research work in numerous international conferences and has extensively published in peer-reviewed journals. He is currently involved in three European projects dealing with the in-depth chemical profiling of amphetamine, methamphetamine and MDMA.

In his spare time, Eric enjoys reading, movies, tennis, cycling, travelling and spending time with friends.

In this presentation, Eric will very briefly explain his current work and activities in the "XTC project" which is a special unit within the illicit drugs department of the Netherlands Forensic Institute. He will then present an overview of the illicit production of synthetic drugs in the Netherlands. Examples of clandestine laboratories and detailed descriptions of the manufacturing processes will be presented.





REVIEW: "Forensic Aspects of the Counter Terrorism and DVI Unit" **by Senior Sergeant Paul Taylor** **ANZFSS Meeting, Wednesday 15th March 2006**

We had the pleasure of a very interesting overview of the NSW Police Forensic Counter Terrorism and Disaster Victim Identification Unit (FCTDVI) from Senior Sergeant Paul Taylor. Unfortunately Inspector Steve McGilchrist was detained on urgent business at the last minute and was unable to present to us.

The purpose of the FCTDVI Unit is to essentially bring forensics to the rescue services and other units that respond to major events. It was established in Jan 2003 and consists of CBR, Post-Blast and DVI sections which used to be separated. Their responsibility includes being available 24/7 to give advice, provide on-site response, screening and laboratory analysis, evaluate OH&S, and to facilitate expert analysis (DSTO for chemical agents, ICPMR for biological agents and ANSTO for radiological agents). They can also outsource to other institutes such as VICPOL or AFP for example. In addition to this, FCTDVI will obtain intelligence data and report this to the relevant authorities.

Paul then took us through some historical events that involved CBR, Post-Blast or DVI response and related these to the major categories of chemical and biological agents. He then explained the characteristics of a chemical incident, why they are used, aspects of the scene examination and response. FCTDVI have to plan for all the agencies involved, recognise what can be analysed and the instruments that can be used (RAMP, SABRE2000, FTIR, GC-IONSCAN) depending on the agents involved. They conduct a priority assessment at the scene.

Paul then showed us some case studies that showed how a sampling team enters the scene first to provide a quick and preliminary evaluation, and the forensic scene examiners enter later to provide a thorough examination and to gain intelligence on the matter.



The other roles of the FCTDVI unit includes scene coordination, liaisons, decontamination and HAZMAT assessments. They also train for a response and include other agencies in these sessions. They assist in covert and overt searches using forensic scientists. They prevent contamination of the crime scene by for example training bomb technicians to double-glove when handling evidence. They ensure safety at the scene and the integrity of the evidence.

Recent involvement of the FCTDVI Unit includes integrating INTERPOL procedures into the DVI process. Paul showed us some examples of DVI events in NSW, as well as aspects of bomb scene examination and the function of the Rescue and Bomb Disposal Section of the FSG. They conduct scene recovery and reconstruction which involves a search covering an area 50% larger than the furthest debris has been located, which is very impressive.

We would like to thank Senior Sergeant Paul Taylor for showing us how the very important FCTDVI unit works and interacts with other agencies. We very much enjoyed this presentation.

Review by Shaheen Aumeer-Donovan



REVIEW: "18th International Symposium on the Forensic Sciences - Classroom to Courtroom"

ANZFSS Symposium, 2 - 7 April 2006, Esplanade Hotel, Fremantle, WA.

The WA Branch of the ANZFSS did us proud with a well-organised International Symposium this year, catering for over 600 local and international delegates. Dr Tony Raymond's opening Plenary set the scene with a very detailed and topical discussion of the current state of forensic science, identifying 9 critical areas of change in our profession: DNA demands; clandestine drug laboratory demands; CT response (esp. bomb/CBRN); new "fringe" players; biometric-related issues; intelligent integration of databases; electronic evidence; impact of regional DVI; and the coming paradigm shift in identification science.

The social program was very interesting, including the X-TEK theme "Priscilla Queen of the Desert" (yes, apparently the entertainers were all men...!) and an appearance by Austin Powers at the conference dinner. Some of us had a chance to go on a ghost tour of the Fremantle Jail and apparently Chris Lenard has a photograph of a ghost from that evening. Perhaps we can persuade him to send that to us for the next newsletter!

The 2008 ANZFSS Symposium will be in Victoria. Hope to see you there!

Shaheen Aumeer-Donovan

Our NSW Branch was very active during the conference, including **Simon Walsh** who gave a workshop "Forensic DNA Statistics" on the weekend before the conference, and the following lectures:

Susan Bennett - UPLC analysis of disperse dyes extracted from polyester fibres

David Bruce - The effectiveness of gelatin strips as soluble adhesive media for the recovery of trace DNA from evidence items

Katarina Burda - Crime scene investigation and forensic examination of paint samples: where was the reference sample collected from?

Wendy Charng - Analysis of street drug seizures in NSW

Jennifer Dainer - Arson devices in bushfires

Runa Daniel - Investigation of single nucleotide polymorphisms associated with ethnicity

Denise Donlon - 1945 Beaufighter and 2005 Sea King helicopter crashes: archaeological and anthropological methods of recovery and analysis

Katherine Flynn - Further applications of infrared spectral imaging for forensic analysis

Michele Franco - A novel method to recover 'trace' DNA

Stephanie Hales - A Bayesian model for GSR evidence interpretation

Aaron Heagney - Chemical profiling of MDMA in AFP border seizures

Kris Illingsworth - Forensic investigators in the hunt for serial offenders

Dianne Little - (1) 'Pseudo-subarachnoid haemorrhage' - a diagnostic problem (2) Multidisciplinary approach to investigation of gunshot wounds

Philip Maynard - Developing latent fingermarks with titanium dioxide nanoparticles: size matters

Laura McGrath - The determination of residual scent persistence using quarantine detector dogs and the effects of masking agents on target scent detection

Lisa Mingari - (1) A novel method for the extraction of accelerants from fly larvae using solid-phase microextrac-

tion followed by GC-MS (2) Optimisation and validation of SPME-GCMS for the extraction of accelerant residues

Jennifer Raymond - Trace DNA analysis: Australian and New Zealand methods survey

Claude Roux - (1) Forensic science education beyond CSI: are we really as good as we think we are? (2) The effects of a biological decontaminate on the recovery of latent fingerprints (3) The evidential value of wine bottle glass

Alison Sears - Lost and found: DNA identification of human skeletal remains

Meiya Sutisno - "Face and body mapping": a new innovation for the identification of criminal offenders or the exoneration of falsely accused persons from CCTV security images

Tamara Szytynda - The human ear - an adjunct for identification

Mark Tahtouh - The use of FTIR chemical imaging for latent fingerprint detection

Christie Wallace-Kunkel - 1,2-indanedione as a fingerprint reagent in Australia - where are we now?

Simon Walsh - (1) Using Australian sub-population data in forensic DNA evidence (2) International comparison of forensic DNA databases

There were also a large number of posters from the NSW Branch - congratulations to everyone involved.





IDIOM INVESTIGATION: Special Fire Investigation Issue

By Ross Brogan

Ever had trouble understanding a fire investigator? Ross has kindly broken down the elements of fire investigation for us so that we can all understand them. Thank you very much for that!

To understand how a fire destroys property, one must understand what fire is and how the combustion principles relate to the phenomenon called "*FIRE*". To successfully carry out a fire investigation, to determine origin and cause (O&C) of the fire, one must understand the fire principles and relate them to the fire scene being investigated

Factors essential for fire to occur:

The Fire Triangle – In scientific terms, the fire triangle consists of a three-sided triangle, with sides consisting of *Heat*, *Fuel* [Combustible matter], *Oxygen* [in air]. If any of the components of the triangle are taken away, the fire will be extinguished. By taking away – Heat – cooling [by water]; Fuel – starvation [removing fuel]; Oxygen – smothering [sand/earth or Carbon Dioxide extinguisher]

Combustion: - An exothermic reaction (with the *liberation* of heat) in which the association of chemical bonds release heat. Rusting is a form of combustion termed oxidation [very slow form] and combustion is a chemical reaction involving oxidation, involving the evolution of heat and light (flame).

Air/Oxygen - The air around us normally contains approximately 21% oxygen. Once the concentration of oxygen, in air, drops below 15% there is considered to be insufficient oxygen for combustion to occur – in fact for breathing to continue efficiently.

Ignition Temperature: - The lowest temperature of a substance at which sustained combustion can be initiated.

Spontaneous Ignition Temperature - [or Auto-Ignition Temp] The lowest temperature at which a substance will ignite and burn without the introduction of a flame or ignition source.

Flash Point - The lowest temperature at which a liquid substance gives off sufficient flammable vapours, in air, to produce a temporary flash on the application of a flame source. [At this point no sustained burning will occur, just a flash as the vapours burn]

Fire Point - The lowest temperature of a liquid fuel that will produce a vapour that once it has flashed, will continue to burn, given a sufficient ignition source.

Heat - The amount of energy contained by a substance in the form of kinetic energy. The heat energy value is measured and is termed the temperature.

Flame - The luminous, visible product of combustion, when insufficient oxygen is available for complete combustion.

Smoke - The visible signs of incomplete combustion. During a fire, if insufficient oxygen is available for combustion to involve all products smoke is produced and contains those products not completely burnt off during the reaction e.g. Carbon Monoxide (CO) Carbon Dioxide (CO₂) Nitrogen (N₂) and depending on what the fuel consists of, other substances such as Hydrogen Sulphide or Hydrogen Chloride. Smoke is therefore the visible product of this incomplete combustion.





IDIOM INVESTIGATION: Special Fire Investigation Issue, continued...

Specific Heat Capacity - The amount of heat required to raise the temperature of a substance through 1 degree Celsius, at a constant pressure. [This is particularly useful for fire-fighters as knowing what substances have a greater specific heat capacity allows them to use the correct extinguishing agent when attempting to put out a fire.] E.g. water has the highest specific heat capacity of all known substances and will require approx. 4,200 joules per Kilogram per Degrees Celsius and will absorb a very large amount of heat energy from the fire, turning water to steam and liberating the heat from the fire.

Exothermic Reaction - A chemical reaction with the liberation of heat.

Endothermic Reaction - A chemical reaction with the absorption of heat.

Latent Heat - The amount of heat energy required to change the physical state of a substance. e.g. ice to water [latent heat of fusion], water to steam [latent heat of vapourisation] etc.

One of the main considerations in stopping a fire spreading, whilst it is being extinguished, is how the fire spreads – the mechanisms of spread. There are three main mechanisms of fire spread. Fire-fighters need to take these three phenomenon into consideration when attempting to contain and extinguish a fire completely: Conduction – Convection – Radiation

Conduction - Conduction may occur in solids, liquids or gases, although it is most clearly present in solids. In conduction, heat energy is passed on from one molecule to the next; much like water is passed from one man to another in a bucket chain. Conduction occurs through transfer of heat along metal beams from one side of a room to another, and in water from the coldest part to the hottest part, such as in a saucepan of water when the water heats and rises to the top.

Convection - This occurs only in liquids and gases. The hot products of a fire (heat and smoke) being buoyant rise to the highest point in the room, or building, and travel under this confining surface until they can find their way higher. Once at the highest point, if still confined, they will build up until matter starts to heat up and ignition can occur some distance away from the origin of the fire.

Radiation - Heat is transmitted in straight lines, by radiation, the same as rays from the sun heat the earth, and burns our skin. Electric radiators heating our homes and offices work on the same principle. Radiated heat from a fire can cause another fire at a distance from the original fire, by heating combustible materials until they catch fire. Combustible material close enough to be ignited by radiated heat from a fire is termed an “*exposure*” by firefighters.

Knowing these basic fire science terms will assist in understanding how fire spreads and how to extinguish it, as well as understanding the spread mechanisms to follow the path of the fire during any investigation.

Expert contributions are gladly accepted - please send your definitions to the editor

Upcoming NSW AFI Meeting:

The next NSW AFI Meeting will be “Back to Basics”. Please refer to the following information:

DATE: Thursday, 25th May 2006
TIME: 7:00 pm
VENUE: Ryde Eastwood Leagues Club
COST: Free

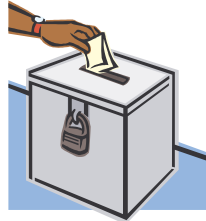




New NSW Committee

At the last meeting we held our Annual General Meeting. Our new Committee was elected and the results are as follows:

President: Claude Roux
 V.President: James Wallman
 Secretary: Lisa Mingari
 Treasurer: Peter Jamieson
 Public Officer: Denise Donlon



Newsletter: Shaheen Aumeer-Donovan
 Merchandise: Alison Sears
 Memberships: Aldo Severino
 Committee: Donnah Day
 Shirleyann Gibbs
 Aaron Heagney
 Eric Murray
 Meiya Sutisno
 Tamara Sztynnda

The major changes included James Wallman being elected into the position of Vice President in the place of Kirsty McAllister who has moved to the Northern Territory. The good news is that Kirsty and some other colleagues will institute a new branch of the ANZFSS for the NT. Congratulations!

Denise Donlon will take over the Public Officer position from Alan Hodda who has done a fantastic job with fixing up our constitution and the "incorporation saga" over the past few years and is unfortunately unable to continue due to poor health. We wish Alan a speedy recovery, and congratulate him on his promotion to lifetime member!

Congratulations to the new Committee and please do not hesitate to contact them with your queries, comments and suggestions.

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:*

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

Website:
<http://www.anzfss.org.au>

Your Committee:

President: Claude Roux
Vice President: James Wallman
Treasurer: Peter Jamieson
Secretary: Lisa Mingari
Merchandise: Alison Sears
Newsletter Editor: Shaheen Aumeer-Donovan
Memberships: Aldo Severino
Public Officer: Denise Donlon
Committee Members: Donnah Day
 Shirleyann Gibbs
 Aaron Heagney
 Eric Murray
 Meiya Sutisno
 Tamara Sztynnda

Final Words:

"If you want to make beautiful music, you must play the black and the white notes together"
Richard M. Nixon (1913 - 1994)