

Business and Law THE FORENSIC Investigator

ISSUE 1 2008

From the Librarian

Some interesting titles recommended by our librarian Selios Podias.

1. Wireless Crime and Forensic Investigation [electronic resource]
Gregory Kipper
2. Forensic Investigation of Stolen-Recovered and Other Crime Related Vehicles [electronic resource]
Eric Stauffer
3. Cyber forensics [electronic resource]: a field manual for collecting, examining, and preserving evidence of computer crimes
Albert J. Marcella, Doug Menendez
4. Forensic Science Under Siege: The Challenges of Forensic Laboratories and the Medico-Legal Investigation System
Kelly Pyrek
5. A Guide to Forensic Accounting Investigation [electronic resource]
Thomas W Golden
Stelios Podias
Law & Justice librarian



Coordinators Corner

We hope to make this newsletter a regular publication with about four issues per year. Future issues will be available on-line, via the Bachelor of Forensic Investigation webpage.

The aim of this newsletter is to let students know what is happening, or about to happen in K09 (K09 being the university code for the Bachelor of Forensic Investigation). The newsletter will also publish articles of interest relating to forensic investigations and provide an opportunity for students to collaborate and produce the newsletter.

In this issue I have included an article on collecting uncontaminated DNA samples, something that is topical in Western Australia today, and extracts from a Western Australia case you might have heard about in the news. Alerting you to articles and cases relevant to your study is one role of the newsletter.

The ability to write clearly, concisely and with academic rigour cannot be emphasised enough both in your studies and professional career. The university provides workshops to help you improve your academic skills including writing and reading, managing your studies and exam preparation. For more info, visit the the Learning Centre web site at ecu.edu.au/student/student-learning.



Finally, this newsletter is aimed at you and therefore I am looking for two students to act as co-editors for the next twelve months. If you are interested in applying to work with me to compile the next four newsletters please reply to the advertisement in the newsletter.

Enjoy,
 Michael Crowley

Lecturers Feed back

Criminal Law 1- some students had problems with referencing in law units, especially the use of footnotes. Mastering this skill is not difficult. You are reminded of the link on the School of Law & Justice webpage that shows you exactly how to reference correctly in law. In addition word processing packages have a drop down option 'footnotes'. The web link is:

<http://www.law.ecu.edu.au/pdfs/Guide%20to%20Legal%20Referencing%20AGLC.pdf>

Mr Crowley.

Is it Murder?

Wednesday, 11th July 2007 started just like any other day for our super sleuth Michael Crowley, renowned NSW barrister and lately, Law lecturer at ECU. He was describing the events of an alleged kidnapping to 40 of the best secondary school science students from Australia and New Zealand.

These students were in Perth for the week, attending Youth ANZAAS. Michael's dissertation was interrupted by news that there had been some urgent developments in the case. It appeared that the victim had escaped and was to be found in the e academy's scenario village.

The students were divided into two groups to pursue this new evidence. One group was escorted to the village whilst the other went to laboratories to carry out forensic investigations.

In the village the victim was found unconscious and an ambulance was called. At this time it became apparent that Dr Peter Roberts knew too much about the situation since he was able to explain to the students how the victim came to be in this situation. Paramedics arrived but were unable to sustain any vitality in their patient. These proceedings brought Police crime investigators to the site and further evidence was collected for laboratory investigation.

At the conclusion of this phase the students brought their evidence back to a mock court where it became clear that the ultimate issue was cause of death – was it murder or natural causes? (Investigation revealed that the victim had a pre-existing heart disease). At every stage in the scenario the jobs and qualification, of those involved, were explained, as were the university paths to gaining those jobs. The students had been exposed to forensic investigation, paramedical science, medical technology, laboratory work, expert evidence and ethical behaviour all focused on the deceased.

This fulfilled the main aim of the morning, which was to expose students to a range of science and law related occupations. The event was a joint venture between Law and Science at ECU providing a program to expose the students to all aspects of a crime, its investigation and eventual prosecution. The usual suspects were Michael Crowley from the School of Law and Justice, Drs Brightwell, Roberts and Stewart from the School of Exercise, Biomedical and Health Sciences and Dr Magda Wajrak from the School of Natural Sciences.

Also part of the program were police crime officers and a St John's ambulance crew who demonstrated resuscitation techniques. The victim was Laerdal's SimMan a sophisticated computer controlled mannequin that can be used to reproduce all types of normal and abnormal human physiology. The conclusion to the investigation was that there had been no murder; death was from natural causes exacerbated by the kidnapping.

Feedback from students was very positive and continues. Students really appreciated the linking of the "Is it Murder?" scenario to the demonstrations and hands-on activities at the Police Scenario Village and in the Science Laboratory. Some student comments were:

"Seeing the SimMan, it was fascinating! And the police village was too. I really liked the forensics because it was more realistic than CSI."

"Edith Cowan University was really interesting, great diversity of options and an engaging presentation."

"ECU and Scitech were awesome."

"The forensic crime scene this morning was awesome. I really liked it because it was hands on and really interesting."



Scenario village at the Police Academy



Testing samples in the lab



Dr Peter Roberts



Get involved with the Forensic Investigator

Needed – two students to take responsibility for future editions of 'The Forensic Investigator' for a period of twelve months. Role involves, amongst other things, sourcing articles, news from lecturers and equipment suppliers and identifying quality work by students for publication. Let your creative flair fly. Please submit a short letter of interest to Michael Crowley by 8 September 2008.

A new weapon in the fight against crime

Die CSL-700 is equipped with a battery pack which lasts 110 - 120 minutes using 100 % intensity or remarkable 150 minutes using 70 %. The LED's used in our CSL-700 are specially selected for Projectina. The beam is collimated with a 6° divergence giving excellent light spot. The life-time of LED's is guaranteed for 50'000 hours. Projectina guarantee Swiss quality workmanship.

Technical Specification:

- Housing made of anodized aluminum
- Battery: Lithium Ion capacity 14,8V, 4,4 amp.
- Mains charger: AC charger 100-240V
- In front of the CSL-700 a side light filter can be clipped for shoe print visualization.
- Protection goggles: red, yellow, orange and clear
- Waterproof
- Lamp and battery: 850 g
- length: Overall 340 mm

Optional Accessories:

- Tripod
- Charger for car lighter 12V
- Belt attachment
- Diverse camera filters
- Side light filter

Aquaterro is the Australian distributor of the Projectina range of products.

Phone: (03) 9754 2922



Cases in the News

Case law decisions can inform and alert forensic investigators to what should and should not have been done 'forensically' at a crime scene. In *Martinez v The State of Western Australia* [2007] WASCA 143 (6 July 2007) most of the forensic problems can be linked to a failure to secure and record accurately the location of the victim and the surrounding crime/accident scene as soon as practicable. The full text can be found at: <http://www.austlii.edu.au/au/cases/wa/WASCA/2007/143.html>

I have included some extracts below that will alert you to some of the forensic issues:

The prosecution contended that there was evidence to support the conclusion that an abrasion on Walsham's back was caused by one of the tyre levers to which the appellants had access from Pereiras' vehicle. Because there was no evidence that Walsham had been struck with

a tyre lever when he was initially assaulted by Fazzari and Martinez, it was contended that an injury on his back consistent with being struck by a tyre lever led to the conclusion that the appellants had returned to the Stirling train station after the initial assault and had then struck him with the tyre lever. No attempt was made to suggest who had struck him or in what circumstances, but it was put that each of the appellants had access to tyre levers which were in Pereiras' vehicle and at least one of the appellants must have done it.

Evidence about the injury on Walsham's back given by Dr Margolius suggested it was in her opinion that the abrasion could have been caused by a tyre lever. It could also have been caused by any variety of curvilinear objects, Dr Margolius said, adding he was alive when it happened (between 12 and 24 hours). Whatever the other

evidence about the abrasion and marks found on the T-shirt of Walsham, the evidence of Dr Margolius meant that the appellants could not be linked to an attack on Walsham with a tyre lever at or about 2:38/2:39am on 28 February...

Assistant Professor Daniel Spitz, a forensic pathologist wrote a written report dated 3 December 2006, expressing the view that the blunt impact injuries suffered by Walsham were most consistent with being caused by a side-swipe motor vehicle/pedestrian collision, with subsequent impact with the road surface less likely to have been caused following a fall from height. The question of whether Walsham sustained his injuries by reason of a fall or alternatively, by reason of impact with a motor vehicle, was very much an issue at each of the trials of the appellants.

Article of **Interest**

Viking DNA

This article highlights the techniques and benefits of taking a serious approach to preventing contamination of samples. Contamination of forensic samples should be avoided, something the Western Australian and Victorian police have had problems with recently. You can learn a lot about what works and how forensic techniques can be improved by reading widely.

See: Evidence of Authentic DNA from Danish Viking Age Skeletons Untouched by Humans for 1,000 Years, Linea Melchior and oths at: <http://www.plosone.org/article/fetchArticle.action?articleURI=info:doi/10.1371/journal.pone.0002214>

Some extracts to whet your appetite: This article looks into the exhumation of ten subjects, performed in a way as to prevent contamination with modern human DNA.

Laboratory staff present during the exhumations removed the last layer of soil from the skulls and extracted two teeth (preferably premolars or canines) from the jaw wearing full body suits, shoe covers, hairnets, filter-containing facemasks, and gloves while being the only persons near the subject. The sampled teeth were immediately transferred to sealed sterile tubes and transported to the laboratory. Soil samples were taken in close proximity to subjects. The remaining exhumation of each individual was carried out using standard archaeological procedures.

Due to the sandy soil the skeletal remains were not cleaned by washing but only brushed. Sexing and aging (performed by Pia Bennike) were performed at the Laboratory of Biological Anthropology, Institute of Forensic Medicine, University of Copenhagen, using a number of anthropological standard criteria when possible.

After the archaeological and anthropological manipulation, a third "handled" tooth was sampled from eight of the ten subjects by a researcher from the Research Laboratory using disposable gloves and face mask, and placed in a sealed sterile tube. All pre-PCR manipulation and cutting of teeth, extraction of DNA and mixing of reactions for PCR was performed in a "Clean-Laboratory" dedicated solely to aDNA work. All chemicals and reagents were of analytical grade or the highest purity available unless otherwise stated. PCR tubes and micro centrifuge tubes for extracts and primers were free of human DNA.

mtDNA was isolated from pulp material. One tooth was prepared and extracted at a time. The tooth was wiped with diluted commercial bleach containing 0.2% hypochlorite, cleaned with water and the surface sealed with lacquer. After cutting the tooth pulp was drilled and DNA was extracted using the dialysis approach...DNA from archaeologists and anthropologists were obtained using EasiCollect for buccal cell collection... To test the overall reliability of the laboratory procedures used (reagents, extraction method, cleaning methods, possible background contamination) a tooth from an Inuit skull from a burial site in Greenland (approximately 500 YBP) was extracted, PCR amplified, cloned and sequenced over the A-segment.



Providing convincing evidence for the successful retrieval of aDNA-especially aDNA of human origin-is a demanding task, and even results that were obtained using extensive precautions have later been disputed and claimed to be 'due to contaminating modern DNA.' The fundamental problem with analysis of ancient human DNA is the abundance of modern human DNA in most contemporary settings. .. The results support the absence of pre-laboratory contamination-in fact any contamination with human DNA.

A PUBLICATION FROM THE
FACULTY OF BUSINESS AND LAW

www.business.ecu.edu.au



EDITOR

Michael Crowley
Faculty of Business and Law
Edith Cowan University
270 Joondalup Drive
Joondalup 6027
Telephone (08) 6304 2117
Facsimile (08) 6304 5315
E-mail m.crowley@ecu.edu.au

GENERAL ENQUIRIES

Business Reception
Faculty of Business and Law
Edith Cowan University
270 Joondalup Drive
Joondalup 6027
Telephone (08) 6304 5666
Facsimile (08) 6304 5633
E-mail business@ecu.edu.au