

**AUSTRALIAN AND NEW ZEALAND
FORENSIC SCIENCE SOCIETY**

**NATIONAL SYMPOSIUM TRAVEL AWARD
APPLICATION FORM**

All applications must be typed.

The closing date for applications is Friday **9 May 2008**. Late applications will not be accepted.

1. DETAILS OF APPLICANT

Name	Example Travel Award Application
Position	
Area of Expertise/Study	
Mailing Address	
Home Address	
Contact Phone	
Mobile	
E-mail	
Local Branch	



2. ANZFSS INVOLVEMENT.

Please provide details of your involvement with the ANZFSS, including duration of membership, positions held and meeting attendance.

2.1 Number of meetings attended in the last two years? Over 75%

2.2 Year first joined the ANZFSS. 2003

2.3 Branch Involvement

Assisted with Branch activities.

Sub-committee member for ANZFSS Public Presentations -
Prostitute Murders December 2007 and May 2008.

Suitcase Murders April 2008.

Assist with organisation and running of the presentations.

3. TRAVEL AWARD BEING APPLIED FOR

- Experienced Member (2 years or greater)
- New Practitioner
- Student

4. ASSISTANCE SOUGHT THROUGH THE TRAVEL AWARD

(please tick appropriate boxes)

- Full Award (Airfare, Accommodation and Registration - up to \$2,000* AUD)
(* New Zealand \$2,300 AUD)
- Partial Award (Registration Fee)

5. HAVE YOU APPLIED TO OTHER SOURCES FOR FINANCIAL ASSISTANCE

- No
- Yes Please indicate source and level of funding:



6. HAVE YOU PREVIOUSLY RECEIVED A TRAVEL AWARD FROM ANZFSS?

No

Yes Please provide details:

7. PRESENTATION DETAILS:

Abstract Title

"The Use of the Golden Engineering XR200 Portable X-ray on Pig Crania - A Pilot Study for Use as a Forensic Tool on deceased persons at Crime Scenes."

"Evaluation of the Golden Engineering XR200 Portable X-ray Apparatus using Tissue Equivalent Radiographic Phantoms – A Preliminary Study for Obtaining X-ray Images of Deceased Persons for Crime Scene and Death Investigations."

"Examination of Trauma to Crania from the Harvard University, Peabody Museum, Peruvian Collection - How Archaeology can Assist in Forensic Science."



Details

"The Use of the Golden Engineering XR200 Portable X-ray on Pig Crania - A Pilot Study for Use as a Forensic Tool on Deceased Persons at Crime Scenes."

When performing crime scene examinations, information pertaining to a deceased person including injuries sustained, foreign bodies or weapons used is of valuable importance in the initial stages of the investigation. A significant challenge to investigators is to achieve this accurately and in a timely fashion. When a deceased person is located, investigators require as much information as possible to determine the identification of the deceased, time since death and whether the death was due suspicious circumstances or natural causes. By performing an x-ray of the deceased person in the crime scene, an accurate, non-invasive internal assessment may be performed potentially giving valuable information immediately to investigators. Information that could be obtained includes location of bullet/projectiles, injuries to bone and prosthetic devices. This is information may not be readily determined until the deceased person has been screened by x-ray in the mortuary some time later.

A pilot study was performed using the Golden Engineering XR200 portable x-ray to determine an effective exposure range to obtain images of diagnostic quality on deceased persons at crime scenes. The apparatus is a valuable piece of equipment used during crime scene examinations. It is a battery powered device that is connected to a notebook computer. The apparatus was developed to provide x-ray information to investigators at crime scenes including x-raying of unknown packages, electronic and explosive devices. Potentially the apparatus could also be of great benefit to investigators of deceased persons at crime scenes.

Six fresh pig crania (*Sus scrofa*) with flesh intact were used as proxy for humans. The crania were subjected to different types of trauma including, gun shot wounds, blunt forced trauma, sharp force trauma and no trauma. A series of x-ray images using varying intensities of exposure were obtained for each of the crania.

"Evaluation of the Golden Engineering XR200 Portable X-ray Apparatus using Tissue Equivalent Radiographic Phantoms – A Preliminary Study for Obtaining X-ray Images of Deceased Persons for Crime Scene and Death Investigations."

Tissue Equivalent Radiographic Phantoms are a useful tool in teaching radiographic students how to effectively position body parts to perform the x-ray exposure of a patient. 'Phantoms' have been developed to give the student an accurate human model to develop correct procedures to obtain images of diagnostic quality without subjecting patients to unnecessary radiation.

The phantoms are constructed from a proprietary urethane material with human skeleton inside. The construction provides a material that is radiographically equivalent to human tissue. This preliminary study was performed to assess whether the Golden Engineering XR200 portable x-ray apparatus would be effective in providing investigators with instantaneous x-ray images of deceased persons for crime scene and death investigations.



The phantom head, hand, knee, thorax, abdomen and pelvis were evaluated using the Golden Engineering XR200 portable x-ray source and the Kodak CR500 computer radiography reader at the Queensland Tuberculosis Control Centre in Brisbane. The resulting x-ray images were examined and compared.

"Examination of Trauma to Crania from the Harvard University, Peabody Museum, Peruvian Collection - How Archaeology can Assist in Forensic Science."

In June/July 2008 I will attend the Harvard University, Peabody Museum, Department of Archaeology and Ethnology, Boston, Massachusetts, United States of America. The Peabody Museum was founded in 1866 and is one of the oldest museums in the world devoted to anthropology. This museum houses one of the most comprehensive records of human cultural history in the Western Hemisphere.

During the early 20th century numerous expeditions were made to Peru uncovering a large number of skeletal remains. Examinations will be performed on the remains and it is my intension to study any evidence of trauma from a forensic scientist perspective. The Peabody Museum has kindly accepted my proposal to examine crania from the Peruvian collection with the intension of developing skills and knowledge pertaining to recognition of trauma in skeletal remains.

The crania to be examined exhibit trauma believed to be due to blunt forced trauma with sling shot injuries and trepanation.



Please comment on the following:

Originality/Novelty of the Topic:

The following journal article is the only example found in the literature relating to the use of a portable x-ray apparatus on humans.

Journal Forensic Odonto-stomatology. 2004 Jun;22(1):5-8.

In vitro evaluation of the XR-150 portable x-ray unit for forensic odontology.

Varghese S, Kimmel A, Radmer T, Bradley TG, Bahcall J.

Department of Orthodontics, Marquette University School of Dentistry, Milwaukee 53233, USA. shaun.varghese@marquette.edu

This research investigated the use of the portable, light-weight radiographic generator, Golden Engineering's XR-150, as a tool in forensic odontology to aid in identification. The XR-150 produced statistically significant ($p < 0.01$) diagnostic images between five and ten impulses in all locations tested: anterior maxilla, anterior mandible, posterior maxilla, and posterior mandible.

The topic of my study was to investigate the use of the Golden Engineering XR200 as a tool for forensic investigators on deceased persons at crime scenes. The originality and novelty of this topic is evident as no papers have been found by this researcher specifically investigating the Golden Engineering XR200 portable x-ray apparatus as a forensic tool in death investigations.

Attending the Harvard University, Peabody Museum, is an invaluable opportunity for learning and research. This is a unique opportunity present my findings obtained from this world renowned collection.

How the presentation/paper will benefit Forensic Science.

This study will benefit forensic investigators by giving them an understanding of how a preliminary x-ray assessment of a deceased person at a crime scene may be performed using the Golden Engineering XR200 portable x-ray apparatus. The x-ray apparatus is able to be transported to any potential crime scene or remote location with digital x-ray images able to be viewed immediately on a computer notebook. This is of great benefit to investigators as it provides them with instant and accurate information. By understanding the benefits and limitations of this x-ray apparatus, investigators may be able to add another valuable forensic tool to their equipment to provide timely and accurate information during the crucial initial stages of an investigation.

This presentation will provide greater understanding and knowledge of trauma to crania for forensic investigators. Having access to a large number of crania within Australia is limited. By presenting my findings, I will give students and practitioners of forensic science the opportunity to gain a greater knowledge and recognition of trauma to crania.

Background to the topic (is it part of under/post graduate study or a case study)

This topic is part of a postgraduate study for Masters in Forensic Science - Griffith University Queensland Police Service Scientific Section.



8. DECLARATION

I certify that I am a current financial member of the ANZFSS and that the information provided in this application is true and correct.

I acknowledge that the travel award is granted subject to the following conditions:

- Acceptance of the abstract/s by the Symposium Scientific Committee,
- Presentation at the Symposium of the poster/oral presentation as outlined in the this application, and
- Presentation at a local Branch meeting either prior to, or, subsequent to the Symposium.

Failure to meet any of the above criteria may affect my entitlement to the award. If for any reason I am unable to meet the above criteria or I am unable to attend the Symposium, I undertake to advise the National Executive accordingly and reimburse any funds provided.

Signed

29 March 2010

Date

9. RETURN DETAILS

The original of this application must be received by the secretary of the ANZFSS Branch of which you are a member by close of business on Friday 9 May 2008.

Late applications will not be accepted.

