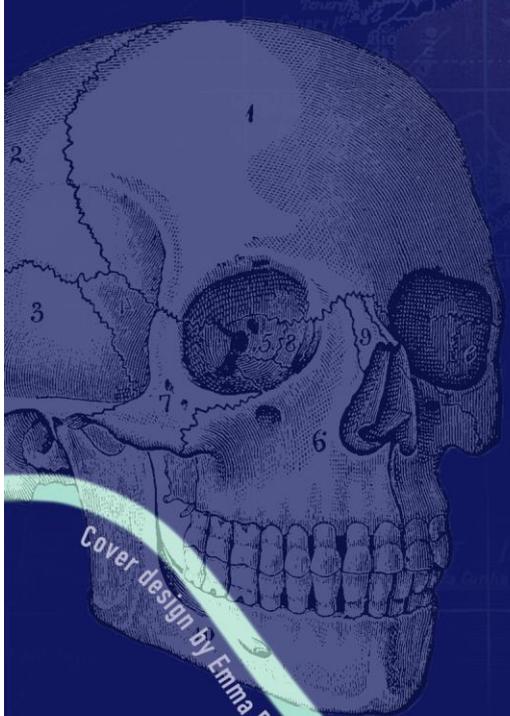


MIGRATION & IDENTIFICATION

BAHID CONFERENCE 2017
CHANCELLORS HOTEL, MANCHESTER
19TH-21ST MAY



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BAHID
BRITISH ASSOCIATION FOR
HUMAN IDENTIFICATION



BAHID 2017 Team

BAHID Honorary President: Dr Dick Shepherd

BAHID Officers: Tom Black (Hon. Secretary), Ray Evans (Hon. Treasurer)

Organising Committee: Tom Black, Ray Evans, Cal Davenport (Mem. Secretary)

Student volunteers: Tara Blackburn, Sarah Burch and Alison Hall

Programme cover design: Emma Price - www.formingfaces.com

President's Welcome

'I extend a warm welcome to you, on behalf of BAHID and thank you for making the journey to Manchester to attend our conference "Migration and Identification", a topic that is very current.

During this conference we hope to gain an understanding of the many challenges involved in determining the identity, the age and often the family relationships of those that may have run from disintegrating countries and regimes whether from fear or for a desire for a better life. We all know that there may be some who are unable to prove who they are or who are perhaps unable or unwilling to answer truthfully the questions "*Who are you, how old are you, where are you from?*" When that happens it is for us to provide reliable assistance to the state ... but also to provide fairness to these often distressed and dispossessed peoples. Many have died in their attempts to reach countries they consider to be caring and identifying those fatalities presents different but equally crucial problems.

Science is also about progress and our presentations will include information about recent scientific advances, together with some case studies relating to methods, ethical and legal aspects of identification of both the living and the dead.

One of the bonuses of attending a BAHID conference is the great diversity, knowledge and wide experience of our delegates and their willingness to chat, share ideas and talk about general experiences and opportunities. Therefore, I would encourage all those attending to use this rare opportunity to mix freely, enjoy the learning, have fun at the social events, but please stay safe, and if you are not yet a member of BAHID - now is a good time to join!

I will be around throughout the conference, so please feel free to come and introduce yourself and chat, as I am always interested in feedback and new ideas for future meetings and how we can improve BAHID for our members.'

Dr Dick Shepherd

Honorary President Elect

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Timetable of Events

Friday 19th May

19.00 – late Evening drop-in in the main lounge at the Chancellors Hotel. All delegates are welcome to attend.

Saturday 20th May

08:45 - 09:15 **Registration and Coffee**
The registration desk will be placed outside the Flowers theatre; coffee will be available in the main lounge.

Morning Session Chair – Dr Leigh Evans

09:15 - 09:20 Welcome to the Spring Conference by Tom Black, BAHID Secretary

09:20 - 09:30 Introduction to the Spring Conference by Dr Dick Shepherd, BAHID President

09:30 - 10:00 Dr John Clark (Forensic Pathologist) – From Killings to Court

10:00 - 10:30 Robert Arnold (British Red Cross) – Refugee Support

10:30 – 11:00 Dr Julie Roberts and Vicky Bowers (Cellmark Forensics) - Achieving a Positive Identification: Factors affecting DNA success rates in highly disrupted and commingled remains

11:00 - 11.15 Coffee in the main lounge
Please take this time to view the Poster presentations in the Flowers Theatre

Morning Session Chair – Dr Dick Shepherd

11.15 - 11.45 Simon Hale-Ross (Leeds Law School) - Migration Concerns and the Identification of Potential Terrorists: The Legal Perspective

11.45 - 12.15 Dr Jan Bikker (ICRC) - Identification of deceased migrants in the Mediterranean

12:15 – 12:45 Mayonne van Wijk (Netherlands Forensic Institute) - Practical considerations of imaging techniques used for age assessment in the living

12.45 -13.45 Buffet Lunch in the restaurant
Please take this time to view the Poster presentations in the Flowers Theatre

Afternoon Session Chairs/Judges – Dr John Clark and Dr Jan Bikker

- 13:45 – 14:05 Tim Widden - Does Increasing Realism in Composite Sketches Improve Recognition?*
- 14:05 – 14:25 Karoline Nyhagen - Age Estimation in The Living Using Magnetic Resonance Imaging - A review of Current Methods Identifying the 18-Years Old Threshold*
- 14:25 – 14:55 Stephen Richey - Volunteer Search and Recovery Effort for Missing Aircraft in Lake Michigan: Planning and Logistics*
- 14:55 – 15:15 Erli Sarilita - Accuracy study of nose width estimation methods in a German adult population*
- 15:15 – 15:30** Coffee in the main lounge
Please take this time to view the Poster presentations in the Flowers Theatre

Afternoon Session Chair – Doris Eerhart

- 15:30 – 16:00 Maria Maclennan (Forensic Jeweller) - Tracing Jewellery for the Purpose of Assisting in Human Identification
- 15:00 – 16:30 Irene O'Sullivan (Netherlands Forensic Institute) - Mass grave investigations - the forensic challenges
- 16:30 – 17:00 Linda Ainscough (Cellmark Forensics) - Unidentified Remains in the UK: An International Problem?
- 17:00 – 17:30 Panel discussion and conclusions followed by the announcement of the student presentation and poster prizes.
- Approx. 17:30** BAHID Members Meeting – N.B. would all those present who are not BAHID members please excuse themselves from the Flowers Theatre at this stage during Association business
- BAHID Council Meeting – Council members only
- 19:00 - 20:00** **Wine and drinks reception in the main lounge**
- 20:00 - late** Buffet dinner in the Chancellors main restaurant, followed by drinks in the lounge

* Student presentation entries

Sunday 21st May

09:30 – 10:30 BAFA Steering Committee Meeting

10:30 onwards BAFA Meeting – BAFA Members only

Speaker Abstracts

Dr John Clark

'From Killings to Court'

ABSTRACT:

Using the example of a mass grave uncovered in the Balkans in the past few years – victims of enforced local migration – this presentation looks at the contribution of pathology evidence in trials in the international courts. It also demonstrates the limitations of such evidence and how much there is still to learn about it all.

BIOGRAPHY:

A forensic pathologist in the UK for about 30 years, practising in both Scotland and England, with additional roles in teaching, examining and organizing. Now retired but continuing with international work, which has included the role of Chief Pathologist for ICTY in Bosnia and Croatia in the late 1990s / early 2000s. Along with assistance in a variety of individual cases from around the world, and more recently, work with the International Criminal Court in Africa, with the UN in Palestine, and with the European Court of Human Rights.

John Clark, Forensic Pathologist, Glasgow, UK
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Robert Arnold

'British Red Cross Refugee Support'

ABSTRACT:

With 19.5 million refugees and nearly 60 million people internally displaced, the number of people displaced by violence and conflict in the world today is the highest since World War II. This is a direct result of conflict and political instability in countries such as Syria, Afghanistan and Eritrea.

Those who make their way to Europe can undergo years of violence, exploitation and imprisonment on their journey. Many lose their lives along the way. When they arrive in Europe they are in desperate need of basic protection and humanitarian assistance.

The Red Cross has a long history of providing humanitarian assistance to refugees and asylum seekers and has over the last two years has been scaling up this work throughout Europe, both in countries along the routes which are most commonly taken when people flee and in countries where people are claiming asylum.

Estimates suggest around 117,000 refugees are currently living in the UK (around 0.18% of the UK population). Rob Arnold, from the British Red Cross, will talk about the experiences of refugees in the UK, the issues that asylum seekers in the UK face and outline how the British Red Cross and other charities support these vulnerable people whilst their applications to become refugees are decided.

BIOGRAPHY:

Rob Arnold has been the Refugee Support Operations Manager for the British Red Cross in the North West since June 2015. He has had a varied 17-year career in the charity sector running social enterprises, being Chief Officer of Manchester CVS and a campaigns manager for Oxfam. Prior to this he was a Civil Servant in the Department of Social Security and the Home Office for 13 years.

Rob manages a team of 23 staff who provide support services for refugees and asylum seekers in Lancashire, Merseyside and Greater Manchester. The North West houses around 25% of all asylum seekers in the UK. Outside of work Rob is a cricket coach and follows most sports as a spectator these days.

Rob Arnold, Refugee Support Operations Manager, British Red Cross
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.....

Dr Julie Roberts & Dr Vicky Boywer

‘Achieving a Positive Identification: Factors affecting DNA success rates in highly disrupted and commingled remains’

ABSTRACT:

On the 22nd August 2015, a 1950s Hawker-Hunter Jet, which was taking part in an airshow, crashed onto the A27 at Shoreham, West Sussex, killing 11 people. The remains of the victims were highly disrupted, commingled and dispersed across the scene. Recovery of all the remains took over 3 weeks and the post-mortem examinations lasted for approximately 5 weeks. Over 1250 body parts, including small pieces of soft tissue and fragments of bone, were examined and 436 samples were submitted to the Cellmark laboratory for DNA analysis. Sample types varied greatly and included a large proportion of bone and internal organs, which would not normally be the preferred choice for DNA analysis in fresh remains. Many of the samples had been contaminated at the scene or during recovery, and degradation of DNA was a concern due to the presence of aviation fuel, extreme weather conditions, the amount of time it took to recover all the body parts and prolonged storage prior to examination.

Post-incident analysis identified a decline in the success rates of DNA analysis over time and a research project was devised to examine this in more detail. Factors considered included; sample choice, condition of the sample, time elapsed between

recovery of the body part from the scene and post-mortem examination, the order in which body parts were processed in the mortuary, and time taken for the samples to be submitted to the forensic laboratory. The aim of the study was to identify the factors which most heavily influenced DNA success rates with a view to mitigating these in future incidents. As part of the research the potential to modify practices at the scene and within the mortuary will be explored. This presentation provides a background to the research, outlines the methodology, and discusses our preliminary findings.

BIOGRAPHIES:

Dr Julie Roberts: Julie is Scientific Lead and Team Leader for the Anthropology, Archaeology and Ecology Department at Cellmark Forensic Services. She has worked as a forensic anthropologist and archaeologist for over 20 years and has attended numerous crime scenes and mortuaries across the UK specialising in the excavation, recovery and examination of unidentified, commingled and burnt human remains. She has acted as Lead Anthropologist in the UK for numerous mass fatality incidents including the London bombings (2005), the Nimrod air crash (2006), the Pamir Aircrash and Warrior IED attacks in Afghanistan (2010, 2012), the Lynx helicopter crash (2014), and the aircrash at Shoreham in 2015. She has undertaken multiple international deployments to Kosovo, Lebanon, Kuwait, Afghanistan, Iraq, France and Germany with the Royal Military Police, JCCC, UK DVI, the British Forensic Team, Albin International Repatriation, the Metropolitan Police Counter Terrorist Command and the United Nations. In many of these cases, Julie has played a key role in setting up and managing the work flow through the temporary and permanent mortuaries, and has acted as Scientific Lead; coordinating other specialists such as DNA scientists, toxicologists, isotope specialists and tool mark experts.

Julie has provided training in Anthropology, Archaeology and Disaster Victim Identification for military and civilian police officers and crime scene investigators since 2001. She is also a lecturer and member of the examination board for the Academy of Forensic Medical Sciences and a guest lecturer at the Universities of Central Lancashire, Bournemouth and Cranfield. Julie is registered as an Expert Advisor in Forensic Anthropology and Archaeology with the National Crime Agency and she is a member of the UK DVI Forensic Expert Group. She is a Fellow of the Royal Anthropological Institute, a committee member for BAFA, a member of BABAO and FASE.

Dr Julie Roberts, Cellmark Forensic Services
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Dr Vicky Bowyer: After completing a PhD in Forensic DNA Transfer, Vicky Bowyer joined Cellmark as a Forensic DNA Analyst in 2008. Over the following years, her experience led to the promotion of Specialist DNA Team Leader overseeing the processing of specialist and sensitive DNA sample types including mitochondrial DNA analysis, Y-STRs and Cellmark's DNA Enhancement. Vicky has also been involved in

several DVI incidents obtaining DNA profiles from a variety of human remains including degraded and historical samples.

Dr Victoria Bowyer, Cellmark Forensic Services

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Dr Simon Hale-Ross

‘Migration Concerns and the Identification of Potential Terrorists: The Legal Perspective’

ABSTRACT:

There certainly has been increased media attention, examining whether or not a terrorist threat is posed from those within the EU refugee population due to the Islamic State terrorist groups press release stating that their operatives would be hidden within. The paper will focus of the issue of migration and the UK’s and US’s action taken in response. It will show that migration concerns within law enforcement agencies rose due to Islamic States press release, leading to some controversial executive actions, such as those taken by US President Trump. Taking a legal perspective, the paper will specifically examine the UK’s newly provided state powers, which are to be used by law enforcement agencies in attempting to identify potential terrorists. However, the paper will inevitably illustrate that due to 21st Century terrorist typecast and traceability issues, the identification of potential terrorists is near impossible.

BIOGRAPHY:

Simon is a Senior Lecturer in Law at Leeds Law School specialising in terrorism and legal counterterrorism measures, and international human rights. His Doctoral thesis examined the UK’s legal response to terrorist communication in the 21st Century, assessing if the measures are successful in striking the right balance between individual privacy and collective security. Simon’s monograph is due to be published late August 2017.

Simon has taught in higher education for 4 years, attaining an award for his commitment to learning and teaching, and particularly his student focus. Prior to academia he spent many years in legal practice for DWF Solicitors and HL Interactive Solicitors, and is an accredited negotiator and mediator.

In addition to his academic specialism, Simon’s research interests include EU law and the CFSP, organised crime and security within the EU, technology and the law, and UK Firearms legislation and policy.

Dr Simon Hale-Ross, Leeds Law School, Leeds Beckett University

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Dr Jan Bikker

'Identification of deceased migrants in the Mediterranean'

ABSTRACT:

This presentation will provide a contextual overview on the issue of missing and deceased migrants in Europe and highlight some of the challenges in the identification of migrants who die along the migratory routes in the Mediterranean region.

BIOGRAPHY:

Dr Jan Bikker is currently a Regional Forensic Advisor of the International Committee of the Red Cross based in Athens. Jan manages the development, implementation and operational aspects of forensic programmes to support European authorities with the identification of missing and unidentified deceased migrants in Europe. He is also working in collaboration with other Red Cross Movement partners to establish transregional coordination mechanisms in countries of origin, transit and settlement to facilitate the collection and transfer of missing person information to Europe.

Jan previously worked on the FASTID-project, which aimed to establish the first international police database at INTERPOL's General Secretariat in Lyon to manage cross-border enquiries concerning missing persons and unidentified bodies in the event of disasters as well as day-to-day policing. He contributed to the development of uniform international DVI standards and the new INTERPOL DVI forms and training programmes for police forces and forensic experts to identify missing persons/unidentified remains of disaster victims according to the internationally recognized standards.

Dr Jan Bikker, International Committee of the Red Cross
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Mayonne van Wijk & Michiel de Haas

'Practical considerations of imaging techniques used for age assessment in the living'

ABSTRACT:

When an unaccompanied minor asylum seeker (UMA) requests asylum, different procedures may be employed depending on the country. When in doubt of the stated age, some countries will perform an age assessment. The methods chosen and techniques used are partly dependant of the national legislation. Ethical

considerations and radiation regulations often dictate these choices. The development of the medial end of the clavicles is often part of a physical anthropological age assessment. An array of reference studies have been published on the use of different imaging techniques, such as conventional radiography, Computed Tomography (CT) and Magnetic Resonance Imaging (MRI), to visualize this anatomical structure. This presentation will focus on the pros and cons of these techniques in age assessment practice.

BIOGRAPHY:

Mayonne van Wijk was awarded a Bachelor of Science in Biomedical Science in 2007 from the Vrije Universiteit and a Master of Science in Forensic Science in 2010 from the University of Amsterdam. Directly following obtaining her master's degree she was hired as a research assistant in the department of forensic medicine of the Netherlands Forensic Institute. Since 2012 she has been in training to become an expert witness in forensic anthropology. Also since 2012, she has been involved in age assessment in the living for asylum procedures. In 2015, her department was requested to perform research into different imaging techniques that could be used in age assessment practice.

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Maria Maclennan

'Tracing Jewellery for the Purpose of Assisting in Human Identification'

ABSTRACT:

The forensic analysis of jewellery pertaining to human identification is a hypothesis very much still in its infancy. Jewellery and gemstones, however, increasingly contribute to practices surrounding identification in a number of forensic fields. Historically, jewellery is an artefact inherently intertwined with the subjects of death and identity; from the Ancient Egyptians to the Victorians. Jewellery has personal, religious and cultural significance, with connection to both place and geographic region. In particular, marks or characteristics such as inscriptions, hallmarks, engravings or serial numbers can prove useful in tracing an item's origins or in narrowing the timeline of a piece's movement across continents. This presentation will discuss some of the potential techniques for tracing and identifying jewellery recovered with human remains that may have relevance to the issues of migration and identification.

BIOGRAPHY:

Maria Maclennan is an award-winning service designer, researcher, facilitator and educator currently based in Dundee, the United Nation's first and only City of Design. She is currently a Forensic Imaging Officer within the Scottish Forensic Services industry, alongside completing her PhD in the interdisciplinary area of Forensic Jewellery at The University of Dundee. Maria has worked as a designer and researcher on a broad portfolio of practice outside, inside and alongside a number of high-profile organisations within government, law enforcement, and education. She has delivered talks worldwide to audiences that include the National Crime Agency, Library of Congress, College of Policing, European Academy of Forensic Science, Dundee International Design Festival, and the UK's most Northerly TED event to date, 'TEDx Inverness'. She has appeared on both live television and radio broadcasts internationally discussing her development of the field of Forensic Jewellery.

Maria Maclennan, Forensic Jeweller
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Irene O'Sullivan

'Mass Grave Investigations – The forensic challenges'

ABSTRACT:

Mass grave investigations, by their very nature, are complex crime scenes. The investigations themselves frequently begin long after an event has happened, and are often conducted in difficult, and sometimes challenging, post-conflict situations. Even when the site is found and the excavation starts, there are many forensic challenges. This presentation will discuss some of these challenges, from the personal perspective of the speaker. The presentation will particularly focus on the investigations conducted by ICTY, discussing the work of the forensic archaeologists, but also the multidisciplinary nature of the investigations.

BIOGRAPHY:

Irene O'Sullivan received a honours bachelor's degree (BA) in Archaeology and Geography (Major archaeology, Minor geography) in 1999 at the National University of Ireland, University College Cork, Ireland. In 2001, Irene obtained a Master of Science (MSc) Degree with distinction in Forensic Archaeology from the University of Bournemouth, UK. During her study for the MSc degree, Irene worked for the UN International Criminal Tribunal for the Former Yugoslavia (ICTY) as a Forensic Archaeologist in Kosovo and Bosnia and Herzegovina. She was part of the team undertaking the forensic investigations of the clandestine and mass graves resulting

from the Balkan conflict. Upon completion of her MSc degree, Irene trained and worked as a Scenes of Crime Officer (SOCO) with Surrey Police in the UK. In 2003, Irene was requested by the UK Foreign and Commonwealth Office to form part of a small forensic team that was tasked with providing assistance/advice to the CPA in Iraq; she continued in this role until the summer of 2004. In 2005, Irene worked as part of the response team in Thailand following the tsunami. From 2005-2007 Irene was Project Manager at the International Commission on Missing Persons (ICMP) responsible, not only for training and education programmes within their Iraq Project, but was also part of the team involved in the ISO17025 accreditation project for ICMPs DNA laboratories. From the end of 2007 until November 2008, Irene worked as a Forensic Officer at the UN International Independent Investigation Commission (UNIIC) based in Beirut, Lebanon. In 2008 Irene became a Senior Forensic Advisor/Scientific Support Co-ordinator at the Netherlands Forensic Institute where she is currently employed. In January 2012, Irene became the Co-ordinator of the Complex Crime Scene module of the Masters in Forensic Science – this work is undertaken in conjunction with her on-going work at the NFI.

In 2015 Irene was invited by the UN Special Rapporteur on Extra-Judicial, Summary or Arbitrary Executions to become part of the Crime Scene and Investigative Strategies sub-group tasked with the revision of the UN Manual on the Effective Prevention and Investigation of Extra-legal, Arbitrary and Summary Executions, commonly known as the Minnesota Protocol.

Irene O'Sullivan, Netherlands Forensic Institute
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Linda Ainscough

'Unidentified Remains in the UK: An International problem?'

ABSTRACT:

There are currently over 1000 unidentified bodies or body parts registered with the UK Missing Person Bureau¹. There has also been a significant rise in yearly reported cases of unidentified remains; 63 in the year 2015/16 compared to 46 the previous year¹. Some of these cases are fortunately identified through comparison of DNA profiles, fingerprints or dental records. However, where identification is not achieved, the challenge then is to obtain as much information about the deceased in order to maximise the potential for identification.

The forensic anthropologists at Cellmark Forensic Services have been involved in a number of these cases. This presentation will outline the holistic approach that we

take in such investigations and show how a structured strategy, utilising a wide range of disciplines can improve the chances of positively identifying the recovered remains of missing persons. The presentation will also outline the specific challenges faced when dealing with unidentified remains where there is a potential for the individual to be a foreign national.

Using case studies, this presentation will show how this approach has, in some cases, led to positive identification and reconciliation of loved ones with families abroad. However, many cases remain unresolved. Thus, it is hoped that by highlighting the challenges and knowledge gaps in current methodologies, this will promote discussion as to where research can assist in improving techniques which can be used in these more challenging cases.

¹NCA UK Missing Persons Data Report 2015/16

BIOGRAPHY:

Linda is a Forensic Anthropologist and Archaeologist at Cellmark Forensic Services. Her casework whilst at Cellmark has included the search for missing, presumed murdered, exhumations, the identification of decomposed and skeletalised remains, the determination of species from fragmentary remains, interpretation of trauma on skeletalised and decomposed remains and the identification of victims of mass fatality incidents (DVI).

She has over 20 years' experience in Forensic Anthropology and Archaeology in police investigation, having worked initially at the University of Milan, Laboratory of Forensic Anthropology and Odontology, then as a Crime Scene Manager for 10 years at Greater Manchester Police (GMP). Linda also carried out forensic anthropology and archaeology work within GMP, including searching for those missing presumed murdered, clandestine burial excavation, crime scene and mortuary examination of decomposed, burnt and skeletalised remains. In addition, Linda has experience of the excavation of human remains in the UK, Italy and South America.

Linda is professionally accredited by the Royal Anthropological Institute as a Forensic Anthropologist (Cert FA-I), is an instructor on the College of Policing Crime Scene Refresher training course and has instructed police officers and crime scene staff in forensic anthropology and archaeology. She is on the Steering Committee for the British Association of Forensic Anthropology and a Fellow of the Royal Anthropological Institute.

Linda Ainscough, Cellmark Forensic Services

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Abstracts: Student Oral Presentations

Tim Widden

'Does Increasing Realism in Composite Sketches Improve Recognition?'

ABSTRACT:

This presentation includes a summary of ongoing research into the impact of increasing realism in facial composite sketches and of using digital filtering techniques to remove errors arising from inaccuracies in eye-witness description. Presented are results from an initial experiment and a follow-up replication study.

In the initial experiment, four composite construction techniques were compared. These included the traditional artist's sketch, a novel photo-montage procedure, and digitally filtered versions of each of these in which mid-tone information was reduced. Analysis of naming results revealed that neither the photo-montage procedure nor the filtered sketches produced a significant improvement over traditional sketches. However, filtered photo-montages produced by a witness-participant who had previously completed a sketch were correctly named more than twice as frequently as traditional sketches. The study therefore provided evidence that giving witness-participants a 'second attempt' at a composite, combined with a supposed reduction in error in photo-montage composites achieved by filtering, resulted in this improvement.

In the replication study, traditional sketches were compared against filtered photo-montage composites constructed after an initial sketch. Whilst data is still being collected from participants who are naming the composites, it appears that similar results are being produced, with a benefit occurring when naming-participants are presented with the sketch composite before the filtered photo-montage composite. This procedure therefore presents a potentially useful method for increasing recognition rates of composites in criminal investigations.

BIOGRAPHY:

Tim Widden is a PhD Student of Facial Recognition at the University of Central Lancashire. His research focusses on the development of novel facial composite construction procedures. He holds an MSc in Forensic Art and Facial Identification from the University of Dundee and has produced forensic artwork for Surrey Police and West Midlands Police forces.

Tim Widden, University of Central Lancashire
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Karoline Elisivdatter Nyhagen

‘Age Estimation in The Living Using Magnetic Resonance Imaging– A review of Current Methods Identifying the 18-years Old Threshold’

ABSTRACT:

In the past few years, there have been a significant increase in immigration to the UK. Many of the immigrants do not have official documents which makes it difficult for authorities to verify chronological age. There is a need to create a protocol for standardised skeletal age estimation methods to assess age in the living to determine whether a person is under or over 18, as this can have impacts for their social wellbeing. This literature based research project assessed current methods for assessing the 18-year-old threshold through looking at the hand and wrist, clavicle and third molars, and whether or not MRI technology could be used instead of radiographs or Computed Tomography. From a review of the literature it was found that methods looking at the hand and wrist could be used to determine that a person was under 18, but not over, and the clavicle could be used to determine that a person was over 18. Third molar development should not be used as an indicator as it was reported to be inaccurate. MRI can replace CT and radiographs, but methods need to be adapted to be used with MRI as using methods developed for radiographs and CT with MRI tended to create greater inaccuracies. These findings show that more research is needed in the field of forensic anthropology to develop a more accurate protocol for determining the 18-year-old threshold, and that current practices for estimating age in the living needs to be changed.

BIOGRAPHY:

Karoline is a third year student in BSc (Hons) Forensic Science and Anthropology at the University of Central Lancashire. This project is the result of her third year dissertation project on age estimation in the living using MRI.

Karoline Elisivdatter Nyhagen,
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Stephen Richey

'Volunteer Search and Recovery Effort for Missing Aircraft in Lake Michigan: Planning and Logistics'

ABSTRACT:

Unsuccessful government conducted searches for missing aircraft leaves families with unanswered questions and without the ability to offer their loved ones a proper burial, or other cultural practices. It also leaves the crash site open to looting as with any other unprotected archaeological site. Volunteer efforts do occur in some cases but seldom initially involve forensic personnel, which leads to potential chain of custody or other legal issues. It also limits the methodology available. Commercial searches are available through various companies but are often prohibitively expensive for most families.

The organization of team with forensics personnel involved helps to lend credibility with medicolegal and law enforcement authorities as well as providing a means to circumvent budget related hesitancy from underfunded agencies. The ability to test new technology and refine processes is also a potential benefit.

This presentation deals with the efforts to establish a volunteer forensic team to provide a qualified and credentialed resource in these, other cases, and the planning and logistics processes for our first search, which should occur in the mid to late summer of 2017. The case in question involves a Cessna light aircraft, which disappeared in January 1988 with four persons on board, three of whom remain missing. The broad need for similar searches and other areas where such a team could be useful will also be discussed.

BIOGRAPHY:

Stephen is currently the volunteer executive director of Kolibri Forensics and completing his bachelor's degree through Thomas Edison State University. He was formerly a deputy coroner after leaving a clinical career including respiratory therapy and emergency medical services and has been involved with forensic research since 2007 focusing on aircraft crashes and injury biomechanics. He has been published in several professional journals and presented at several conferences in the past. His plans include a master's degree and doctorate in forensic anthropology.

Stephen L. Richey, Thomas Edison State University, Kolibri Forensics
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Erli Sarilita

'Accuracy study of nose width estimation methods in a German adult population'

ABSTRACT:

This study analysed relative widths of skull and nose in an adult German population, with the aim of improving the accuracy of craniofacial forensic reconstruction. Samples of 176 head CT scan slices were transformed to three dimensional images using Invesalius software. The actual maximum aperture width (MAW) of the three-dimensional skull and maximum nose width (MNW) of the three-dimensional image were measured. A new method of estimating MNW based on MAW was derived from this population using linear regression. Two previously published nose width estimation methods based on skull morphology and the new derived method were tested in this study.

Sexual dimorphism was detected in both MAW and MNW dimensions, in which males exhibited statistically significant larger values than females. The earliest estimation method (Gerasimov, 1955) performed better in estimating male MNW, while the later method (Krogman and Iscan, 1986) resulted less error in predicting female MNW. When the accuracy of the two published methods and the derived method were compared, the degree of agreement between the estimated and the actual MNW value based on Intraclass Coefficient Correlation (ICC) was best in the derived method. This indicated that the new derived method might offer better accuracy in nose width estimation for a German adult population than previously used methods.

Keywords: craniofacial reconstruction, forensic anthropology, nose morphology, nose width estimation.

BIOGRAPHY:

Erli Sarilita has an MSc Human Anatomy from the University of Dundee. This, alongside her current PhD research at the Centre of Anatomy and Human Identification, is funded by the Indonesian government scholarship. She is also a dentist and a lecturer at the Faculty of Dentistry Universitas Padjadjaran Indonesia on study leave.

Erli Sarilita, University of Dundee
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Abstracts: Student Poster Presentations

Carla Burrell, Thomas Fildes, Eleanor Dove, Silvia Gonzalez, Lynn Smith and Joel Irish – Liverpool John Moores University

'One Bailey, Two Bodies'

ABSTRACT:

A community archaeological excavation was commissioned by Norton Priory Museum and Gardens to explore the ruins of Halton Castle in 2015. This Castle stands on a rocky hill above the former village of Halton and remains to this day a prominent feature within the landscape, overlooking the River Mersey. Halton Castle has an extensive history from its establishment and collapse in the Middle Ages and the later sieges of the Civil War. The planned excavations were intended to explore the structures of the outer bailey of the Castle and to further investigate features previously identified during the 1980's excavations. Surprisingly, a discovery during the final days of the excavations revealed two well-preserved human skeletons.

The bodies of two human skeletons were found buried within two meters of each other however, the results of AMS radiocarbon dating analysis suggest they were buried c.100 to 200 years apart. The discovery of these remains prove to be a mystery as very few skeletons are found in such contexts. Here, this paper presents the osteological analysis conducted on both individuals to identify their pasts, exploring the mystery of the 'bodies in the bailey'.

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Rose Drew, Gwyn Madden and Karl Alvestad – University of Winchester

'Poor, Marginalised, But Maybe Not Forgotten: Seeking 'Baby Anne' in the Workhouse cemetery'

ABSTRACT:

In early modern Denmark-Norway, it was very hard to be a beggar, unemployed or anything less than totally incapacitated. It was even harder to be any of these, and female. In 1989, in preparation for a new police station, the old cemetery from Oslo's House of Correction, Tukthuset, was partially cleared. The cemetery was in use for a limited time; only inmates, either alone in the world or unclaimed by relatives were interred within it. The remains, stored in about 200 boxes, consist of fairly complete individuals as well as commingled remains. Anthropological analyses are being

completed. Ongoing research will verify the presence of TB using aDNA; and investigate diet via stable isotope studies.

Another project focus will be social: one neonate is potentially connected to a living relative. Jorunn Torstad, a 68 year old Oslo resident, has traced her great-great-grandfather Christopher Christopersen, wife Berit Knudsdatter, and newborn daughter Anne to Tukthuset, where all died. Their names are in the archives; their magistrate's trial recorded. Torstad's great-great-grandfather, born in 1808, had been left with relatives age one and survived. One full term neonate, several preterms, and several older infants have been found in the collection; aDNA studies are planned for the neonate to determine biological sex and any possible connection with Torstad.

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Bupe Mwambingu Fathelbab and Jo Morrissey – Liverpool John Moores University

'Can Ancestry be determined by Fingerprint ridge pattern – 1st Level detail?'

ABSTRACT:

Fingerprinting examination, or Dermatoglyphics, is a world-wide accepted method and one of the most widely used forms of personal identification. The identification process involves the analysis of ridge pattern details, and is usually based on the comparison of a single fingerprint impression, or partial print of that impression. This study aims to examine whether gender, ancestral background and ancestral sub-groups can be determined by fingerprint ridge pattern (first level detail). This information can assist scientist in obtaining biological information on an individual fingerprint when no comparative results are available for use during a forensic investigation.

The study presented here explores the biological factors that influence fingerprint pattern detail. This should in turn increase the understanding of human fingerprint patterns. While taking into account recent scientific studies that have examined gender influence and ethnicity, a sample of 180 individuals (49M/131F) from three ancestral backgrounds; Caucasian, African and Arabic was used for this research.

The results suggested that certain biological factors can influence fingerprint ridge pattern. The effect of ancestry (race) was significant, whereas gender was insignificant. Further significance was found when comparing ancestry and pattern types on the thumbs, left fore and left little fingers. The significance between ancestral population groups suggested that certain pattern types on the left thumb, left Fore finger and Right middle finger can help predict the ancestry of an individual. The results from this study suggest that further investigation is needed in this area, as it could

provide valuable new information in both an anthropological and forensic science setting.

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Emma Johnstone – De Montford University

‘Forensic identification of decedent migrants: why innovative new methods are needed’

ABSTRACT:

The world is in a state of mass movement. While migration may not be a new phenomenon, we are currently experiencing movement on an unprecedented scale. For example, over one million migrants arrived in Europe in 2015 but nobody knows about those who did not arrive; those who attempted the journey but perished en route.

The international forensic science community is responding to this humanitarian crisis and attempting to identify decedent migrants. However, due to the complex nature of the migrant situation there are practical limitations to some conventional identification methods such as dental records and DNA profiling. Antemortem data can be difficult to gather.

The limitations of conventional forensic identification methods may mean that innovative, new scientific techniques are required. Several novel approaches are utilising social media to reach out to migrants and their families. For example when faced with a lack of ante mortem data to match with primary identifiers personal descriptors may be compared with photographs on social media accounts.

This poster will present some of the challenges associated with identifying decedent migrants compared to more “standard” human identification efforts. Potential new innovative methods will also be discussed.

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Ching Yui Jessica Lui – Liverpool John Moores University

‘Comparing multi-image and single-image facial recognition in children’

ABSTRACT:

The National Center for Missing & Exploited Children (NCMEC) received a 432% increase in child sexual abuse images for the purpose of identification between 2005 and 2009 (U.S. Department of Justice, 2010), and have assisted in the identification

of 2,589 victims related to indecent images of children in 2015 (NCMEC, 2015). The challenges not only lies on face recognition in the wild, but also the growth of the child's face. Three sets of longitudinal growth images were analysed from video clips obtained from YouTube. This study showed an improved recognition rate by using multiple images as source (n:1 verification), compared to one single image (1:1 verification). This suggests the benefits of group tagging images for facial recognition in the wild as a recommendation of practice when designing an algorithm for the identification of children.

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Ellenor Millican and Catriona Davies – University of Dundee

'Analysing relationships between the hand and foot dimensions of a Scottish population for the purpose of identification'

ABSTRACT:

Multiple linear regression equations developed from living individuals hands and feet may be applicable to these disassociated elements for the purpose of identification. This study assessed whether multiple linear regression equations developed from hand and foot dimensions of a living Scottish sample (n=66, 16M, 50F) can discriminate between these elements of a deceased Scottish sample (n=8, 6M, 2F). Eight hand and foot dimensions of the deceased sample were estimated using these multiple linear regression equations. The accuracy of each multiple linear regression equation was determined by comparing the 'actual measurement' and the 'predicted range'. Poor accuracy levels and precision resulted from the application of the multiple linear regression equations to the deceased sample. Overall, 42% of dimensions were accurately estimated. The estimation accuracy of male and female dimensions differed: 48% and 25% respectively. LHHB (left hand hand breadth) was accurately estimated for the entire female sample. RHHB (right hand hand breadth) and RFFB (right foot foot breadth) were accurately predicted in 83% of the male sample. Foot dimensions had a higher frequency of accurate estimation in males than females. Low accuracy and poor precision resulting from the application of the multiple linear regression equations to the deceased suggests that such equations cannot accurately estimate hand and foot dimensions to discriminate between deceased individuals.

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Angela Ofele, Costa Eliopoulos and Matteo Borrini – Liverpool John Moores University

‘Sharp force trauma: The effects of blade damage on the cut mark shape’

ABSTRACT:

A considerable number of homicides in the UK are committed by stabbing. While tool mark analysis can identify class characteristics of the knife that caused a certain cut mark, the literature lacks studies about individual characteristics transferred from the knife blade to the cut mark. Therefore, the aim of this study was to determine whether damage on a knife blade was capable of transferring individual characteristics to the cut mark that are unique enough to identify a specific suspect weapon. Three non-serrated, three micro- and three macro-serrated knives were used and the blades of two of each knife type were damaged in different ways and used to stab pig ribs (*Sus scrofa domesticus*). The entrance and exit shapes produced by these knives exhibited significant differences in each knife type for the control and damaged blades. It was observed that the characteristic V-shape of knife cut marks changed depending on the edge grind, but also on the damage inflicted on the knife blade. The observation that the damage on the blades closely corresponded to the shape of the cut marks can prove to be very useful in investigations where stab marks are caused by a knife with a damaged blade.

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Megan Quick – Liverpool John Moores University

‘Predicting optimal forensic remote sensing and near-surface detection methods’

ABSTRACT:

Police investigators need to locate buried forensic targets, such as clandestine graves, accurately, quickly and efficiently. Remote sensing and near-surface detection methods, though increasingly used in criminal investigations, are not always successful in locating clandestine graves, especially in variable terrains and climates. As Davenport (2001) states “there is no remote sensing method that will consistently find a body or physical evidence”. At present poor choices of detection methods are sometimes made either because of personal preference, what instruments are available or through unguided trial and error, resulting in poor outcomes and wasted time. There has been little published research on choosing optimum remote sensing methods for a particular site and evidence being sought.

This research therefore aims to build and test a computer-based system which will rank remote sensing detection methods by considering the properties of the target and its environment, thus improving detection method choices and the rate of recovery of buried targets. The research began by assembling current best survey practices by a literature review and approaching expert surveyors from forensic science and archaeology, to collate a database of what methods are currently being used to detect buried forensic targets.

The aim of the research is to bridge the gap in the research by encouraging the flow of information to improve the computer-based system by building wider relationships across the professional forensic field. The intention is to create closer inter-disciplinary collaborations and, produce standardised and improved search protocols.

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Steven Walden, Sam Evans, Jacqui Mulville and Wendy Rowe – Cardiff University

‘Quantifying Microcrack Length on Bone Fracture Surfaces’

ABSTRACT:

The aim of this study was to investigate the variation of microcrack length during soft tissue putrefaction over 140 days using a porcine experimental model in surface and burial depositions. Porcine rib samples with adhered soft tissue were surface deposited under bark chips, and buried under 300mm of loam soil. The samples were excavated every 28 days for 140 days and were then impacted from a drop height of 200mm, with a hemi-cylindrical tup of 15mm radius, attached to a 5kg drop weight on a Instron Dynatup impact tester. The T0 (perimortem simulation) samples acted as an intrinsic experimental control and climactic change was accounted for. The fractured surfaces of the samples were then examined at 13 – 16 times magnification and 14 keV beam intensity, to determine changes in microcrack morphology in cortical bone during the decomposition process. Human bones were tested for comparison. 20mm casts were made of the fracture sites of interest, from human remains with known perimortem trauma and taphonomic damage at the Natural History Museum, London, and again examined under SEM. An increase in net length of microcracks was observed as soft tissue decomposition progressed on the fractured cortical bone surfaces of the experimental porcine samples in both burial and surface deposition scenarios, which also exhibited a change in morphology from a large prevalence of three cracks emanating from a point, to a more linear format, tracking lamellae. This change was also apparent when comparing human bones with perimortem trauma to those with taphonomic damage.

Citations: Outram, 2001; Weiberg and Wescott, 2008; Lesnik 2001; Nagajara et al, 2003; Wheatley, 2008; Najafi et al, 2007; Vashishth et al, 2000.

Acknowledgements: Robert Kruczynski, Gareth Short

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Micol Zupello, Sue Black and Lucina Hackman – University of Dundee

‘Age estimation in living individuals: development of a new staging method and protocol of study using MRI of the knee from a Scottish population’

ABSTRACT:

Age estimation in living individuals can be of assistance in a forensic setting when it is necessary to determine if an individual has reached a defined age threshold. Different skeletal areas and imaging techniques have been used for age assessments and more recently MRIs have proved to be of value in this regard. Few studies have been undertaken and further research is required to validate and test the reliability of the methodology if it is to reach admissibility standards. This research involves the study of the MRIs of up to 440 Tayside patients aged between 10 and 20 years. The main aim of the research is to describe the skeletal development of the distal end of the femur using Proton Density Fat Suppressed (PDFS) MRIs of the knee using both coronal and sagittal planes, and to develop a staging method useful for age assessment in living individuals based on morphological observations. The second part of the research will involve the comparison of different MRIs settings (PDFS, Proton Density and T1 weighted images). This comparison will allow a test of the different information and morphological features identified as useful for age estimation that can be observed using varying MRI settings. The final aim of the research is to develop a protocol for analysis and guidelines that can be followed by practitioners when estimating age using MRIs of the knee.

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Sri Forensics have kindly contributed towards the wine reception.



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As an exclusive offer available to BAHID members only, Forensics Europe Expo offers a 20% discount on all conference passes, with details available closer to the event date.

BAFA Members Meeting Agenda

Sunday 21st May at 10:30am in the Flowers Theatre

1. Apologies
2. Minutes of previous meeting
3. Matters arising – update for the year
4. Update from the BAFA committee meeting
5. Membership
6. Disciplinary process documentation
7. RAI Code of Practice - update
8. FAIII, FAII and FAI exams – dates/venues etc.
9. Mentorship, formalising the process
10. Future position of BAFA.
11. AOCB

Amenities

Car Parking

Car parking is free to all delegates of the workshops and conference

Dress Code

Smart casual will be the recommended dress code for all BAHID conference sessions and events. Be comfortable!

Location of Meeting

All workshops and the conference will take place at The Chancellors Hotel and Conference Centre.

Telephone: +44 (0) 161 907 7414

Email: chancellorsbooking@manchester.ac.uk

Address:

Chancellors Hotel,
Chancellors Way,
Moseley Road,
Fallowfield,
Manchester
M14 6NN

For Satnav, please use M14 6ZT

Accommodation

Built for Sir Joseph Whitworth, engineer and entrepreneur, around 1850 Chancellors Hotel went on to become the home to C P Scott former editor of the Guardian before eventually being bequeathed to the University of Manchester and becoming the hotel to the University's Chancellors. Chancellors Hotel is situated close to the University's student accommodation and convenient for anyone visiting the University or Manchester. Whilst the University uses the hotel for meetings and conferences a great many guests have no connection with the University and use it as a convenient and great value hotel for overnight stays, meetings and family events.

For those searching for hotels in Manchester, UK, whether for business or leisure purposes, Chancellors Hotel offers a high-quality, excellent value and convenient solution. Chancellors Hotel is comprised of a Grade II listed mansion with bedroom extension located in Fallowfield, Manchester, and is surrounded by five acres of beautiful gardens, providing a relaxed, scenic and picturesque setting that is especially ideal if you are looking for wedding venues in Manchester, or a lavish conference hotel for an important business event.

The hotel is 3-Star AA establishment with 70 en-suite bedrooms, each featuring a flat screen television, hair dryer, telephone, and complimentary tea and coffee. Chancellors Hotel also offers FREE high speed broadband and Wi-Fi in public areas.

Please call +44 (0) 161 907 7414 to book, quote BAHID and reference number **24810** to get the preferred rate for the room. Room rates include full breakfast and VAT.

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Upon registration, each delegate will receive a BAHID conference identification badge. Delegates should wear this badge at all times during the conference period.

Smoking Policy

No smoking is permitted inside The Chancellors Hotel and Conference Centre but there are designated smoking areas outside the buildings. It should be noted that this includes the use of electronic cigarettes.

Getting around

By Rail

Long distance trains arrive at Manchester Piccadilly Station. Either take a taxi (approximately 15 minutes) or take a five minute walk to Piccadilly Gardens Bus Station. Short distance rail service departs from Manchester Oxford Road Station and Manchester Victoria Station.

By bus

Take a bus numbered 41, 42 or 43 from Piccadilly Gardens Bus Station to Wilmslow Road, Fallowfield. Walk to the junction with Moseley Road and turn left. At the next set of traffic lights turn left into Chancellors Way and the hotel is on your left, opposite the Armitage Sports Centre.

From Manchester International Airport

Manchester International Airport is approximately 5 miles from Chancellors (about 20 minutes by taxi). If you wish to take the train from the airport there is a 24-hour service which runs 7 days a week, every 15 minutes during peak times and goes direct to Piccadilly Train Station. From the station either take a taxi or take the short walk to Piccadilly Bus Station and catch one of the many buses that follow the route to Wilmslow Road, Fallowfield.

From Scotland and the North

From the M61 join the M60 following signs for Manchester Airport. Then join the M602 (signposted Salford). Follow signs for Manchester Airport onto the A57. At the roundabout take the 3rd exit (A5103), after approximately one and a half miles take a left at the traffic lights into Wilbraham Road (A6010). At the 4th set of traffic lights, turn left into Chancellors Way. Chancellors Hotel is situated on the left hand side opposite the Armitage Sports Centre.

From the South

Leave the M6 at Junction 19 (Knutsford), turn right onto the A56 and follow signs for Manchester Airport. At the roundabout, take the 3rd exit for the M56 (Manchester).

Take right hand lanes to the end of the motorway and join the A5103 - keep forward (signposted Manchester City Centre). At the 5th set of traffic lights turn right onto Wilbraham Road (A6010 signposted Sheffield). At the 4th set of traffic lights turn left onto Chancellors Way. Chancellors Hotel is situated on the left hand side opposite the Armitage Sports Centre.

From the East

At the end of the M67 turn left onto the M60 (Stockport). Leave the M60 at Junction 5 and join the A5103 - keep forward (signposted Manchester City Centre). At the 5th set of lights turn right onto Wilbraham Road (A6010 signposted Sheffield). At the 4th set of traffic lights turn left onto Chancellors Way. Chancellors Hotel is situated on the left hand side opposite the Armitage Sports Centre.

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When driving to the Chancellors Hotel and Conference Centre via satellite navigation, please use M14 6ZT as the postcode.