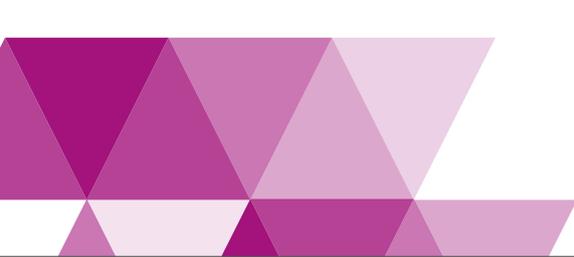


Early Careers Symposium 2018

Delegate Welcome Pack



WELCOME

Further to your acknowledgement email please find enclosed an overview and information regarding the Early Careers Symposium 2018, on the 9th and 10th July 2018 at Chesford Grange Hotel (Warwick).

Hotel rooms are accessible from 3pm on the date of arrival, if you require accommodation on the 8th July this is available at the rate of £95 for single occupancy, and can be booked with the hotel direct by calling the Central Reservations Desk on 01926 859 331. Please quote “Early Careers Symposium” when making your booking.

Further information regarding Chesford Grange and the surrounding area can be found in this pack. In the event that you require any further information or assistance please do not hesitate in contacting Lucia McDyre (lucia.mcdyre@awe.co.uk).

Yours sincerely

Lucia McDyre
Early Careers Symposium Committee



Early Careers Symposium 2018

PROGRAMME OVERVIEW

July 9th 2018

08.15—08.45	Registration and Coffee - Kenilworth Foyer
08.45—09.00	Welcome - Kenilworth 3
09.00—10.00	Keynote Speaker: Major General James Cowan CBE DSO, HALO Trust - Kenilworth 3
10.00—11.00	Early Careers Presentations: Douglas Cook, Roxel; Ross Colbourne, Dstl; William Hick, QinetiQ; Liam Rogers, AWE - Kenilworth 3
11.00—11.20	Coffee - The Grange
11.20—11.50	Susan T, CPNI - Kenilworth 3
11.50—13.10	Career Panel: Dave Holley, BAE; Claire Leppard, AWE; Andy Pettitt, Spex Group, IExPE - Kenilworth 3
13.10—13.50	Lunch - The Grange
13.50—16.30	Teambuilding: Steve Miller, AWE - Gardens
16.30—18.00	Free Time
18.00—19.30	Poster Competition and Networking - The Grange
19.30—21.30	Formal Dinner: Dinner Speaker Hugh Bellars, DE&S - Kenilworth 3
21.30—22.00	Fireworks Spectacular: Andy Hubble, Star Fireworks - Gardens

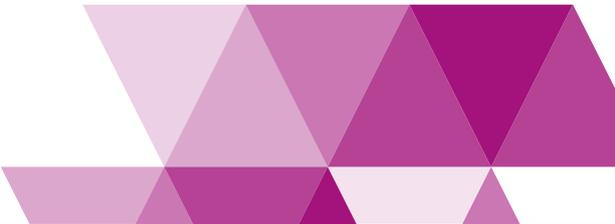
Early Careers Symposium 2018

PROGRAMME OVERVIEW

July 10th 2018

08.30—08.40	Welcome - Kenilworth 3
08.40—09.00	Steve Miller, AWE - Kenilworth 3
09.00—09.30	Sharon Broome OBE, Dstl - Kenilworth 3
09.30—10.00	Matt Brookes, Dstl - Kenilworth 3
10.00—10.30	Mark Penny, BAE Systems - Kenilworth 3
10.30—10.50	Coffee - The Grange
10.50—11.30	Explosive Search Dogs Demo, RFA - Kenilworth 3
11.30—12.45	Early Careers Presentations: Matt Baldock, Roxel; Sarah Bibby, Dstl; Adam Cooper, AWE; Joe Spooner, Dstl; Tommy Lodge, Dstl - Kenilworth 3
12.45—13.25	Lunch - The Grange
13.25—13.55	Purnima Patani, Cranfield University, CoEEM - Kenilworth 3
13.55—14.25	Teele Tuuna, EFEE - Kenilworth 3
14.25—14.55	Christelle Collet, MSIAC - Kenilworth 3
14.55—15.15	Huw Parry, Julie Softley, OME Apprenticeships - Kenilworth 3
15.15—15.35	Andy Carr, E&R Trust - Kenilworth 3

Early Careers Symposium 2018



SPEAKER INFORMATION

Major General James Cowan, CBE DSO, HALO Trust

The HALO Trust is the world's largest NGO clearing the debris of war. HALO employs 8,000 people in 23 countries and has its headquarters in Scotland, although very few people know that it is in fact Scotland's largest charity. Since its foundation in 1988, HALO has cleared nearly 2 million mines and countless other ordnance. Whole countries such as Mozambique are now mine free, but the nature of the challenge is evolving. In place of landmines, HALO is increasingly clearing small arms and explosives. Home-made bombs called Improvised Explosive Devices (IEDs) are beginning to kill more people than landmines – HALO is beginning to clear them too. And instead of war being fought in rural areas, conflict is increasingly centred on cities which requires a very different approach to clearance. The lecture will explore the evolution of HALO and what the future holds. It will explain how HALO recruits, trains and manages the careers of its staff.

James Cowan is CEO of The HALO Trust. He joined the British Army in 1982 as a private soldier, serving first in Northern Ireland. After Oxford University and the Royal Military Academy Sandhurst, he was commissioned into the Black Watch in 1987 serving in Berlin, Northern Ireland, Hong Kong and Africa. He served in Iraq in 2004, 2006 and 2007 and commanded British forces in Helmand in 2009 and 2010. In 2010, he was appointed Head of Counter Terrorism in the UK Ministry of Defence and planned the security operation for the 2012 London Olympic Games. As a major general, he commanded the 3rd (UK) Division, which he trained and prepared to respond to emerging global crises. He became CEO of The HALO Trust in 2015.



Early Careers Symposium 2018

SPEAKER INFORMATION

Douglas Cook, Roxel

The initial section of the presentation will give an outline of what thrust modulation is and how it can enhance rocket motor performance. The presentation will cover a number of different design options that have been developed over the years and discuss their benefits and drawbacks with particular emphasis on applicability to tactical missiles. The second section of the presentation will discuss Roxel's Discrete Variable Thrust (DVT) research and development programme. During this programme a dual bell nozzle with discretely variable throat area has been developed. This provides relatively low cost thrust modulation with significant improvements in overall missile range and velocity profile. This section will include an overview of the nozzle design and the principle of how it works. The use of analysis tools such as Computational Fluid Dynamics (CFD) will be discussed and how they provided invaluable insight that was utilised to improve subsequent design iterations. A video of a static firing trial will be shown and a comparison given to 1D ballistic predictions. The final section of the presentation will look at future design considerations for DVT including the use of additive manufacturing to enable complex geometries, as well as ceramic coatings to reduce the overall nozzle mass.

Ross Colbourne, Dstl

Programmable Dispersal Grenade: An initial requirement was set to develop a new projectile that was capable of dispersal of multiple payloads. The initial platform design was to be launched from a 40mm grenade and interface with a fire control system. The design of the projectile was to be flexible enough to enable different payloads to be carried. A feasibility and options study was conducted to understand the available technologies, looking into specific systems in service and development, and COTS (Commercial Off The Shelf) components that would be capable of providing the desired dispersal effects. The output from the feasibility and options study informed a design to carry forward for demonstration and test. A small quantity was manufactured in house to test the ejection of "representative" payloads, with a trial successfully demonstrating the underlying principles of operation.

Ross studied Aeronautical Engineering at the University of South Wales where his final year project was to develop an autonomous UAV. As part of his course he completed a placement year as a project manager working for NATS air traffic control. He currently works in the counter terrorism techniques team at Dstl.

SPEAKER INFORMATION

William Hick, QinetiQ

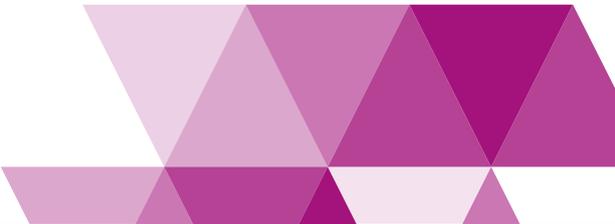
Anatomy of a Trial: My presentation will guide the audience through the lifecycle of a land weapons trial from the initial customer requirement through to the execution and reporting. Trials have a large amount of background work behind which often goes unseen by the customer. An insight to this background work will be hugely beneficial to those who require trials conducted for them and for those who conduct trials themselves in order to share best practice.

William joined QinetiQ in 2016 as a Higher Level Trials Management Apprentice at MOD Shoeburyness, where he works in the management and conduct of Static and Dynamic trial activities. He has been involved in trials ranging from medium calibre guns to IM testing on complex weapon systems. In his spare time, he serves in the Army Reserve with 33 Engineer Regiment (EOD); the regiments role has allowed for both his civilian and military careers to be mutually supporting.

Liam Rogers, AWE

The Half Peach test has been used historically as a standard performance test for explosive compositions. The applicability of the test has been questioned due to inherent variation in both the detonators and the charges themselves. As such, statistical analysis of historic data was undertaken for validation purposes. The variation in function time of the detonators was determined to be a significant factor in the perceived performance of the explosive Half Peaches. Normalisation factors were determined for each detonator lot and the associated Half Peach data adjusted accordingly. Significant variability in Half Peach function time was found even after corrections had been applied. This variability was enough to mask the effect of accelerated ageing and MET trials. Ultimately the historic Half Peach test was deemed insufficiently accurate to capture changes of the magnitude required for the explosive qualification programmes.

Prior to working at AWE Liam attended the University of Sheffield and University of Queensland, studying Chemistry. On completion of his Masters he considered employment in a range of fields before settling on AWE because of its range of technical challenges and niche of work he wouldn't be able to find anywhere else.



SPEAKER INFORMATION

Susan T, CPNI

Historic and recent terrorist incidents have seen the use of improvised explosive devices (IEDs). These contain varying quantities of explosives and sometimes fragmentation. When detonated, the effect from these devices can create building damage and also human injury. Within the Explosive and Ballistic Protection team in CPNI, we conduct research to understand the effect of IEDs detonating against different building materials and develop mitigation and protection measures which can be installed by building owners to protect people from this type of threat. This presentation will provide a brief introduction to the research we conduct and the mitigation measures we recommend.

Dave Holley, BAE Systems

A case study of a Manchester University Chemistry graduate who entered the MoD at the Royal Ordnance Factory at Chorley. He was immediately given the difficult task of acting as the liaison man between the research and production facilities. He learned about explosives from his colleagues, peers and superiors alike and developed an interest in systems thinking. This interest later led to a formal qualification that helped not only in the application of the energetics materials knowledge he had acquired, but also assisted in developing that knowledge into practical problem solving. The systems approach also helped in communicating with scientists and engineers from other disciplines and training early career staff, passing on acquired knowledge.

Claire Leppard, AWE

Dr Claire Leppard has worked at AWE for 17 years since graduating in Applied Science with a PhD from Coventry University in 'Mathematical Modelling of Some Mechanical Properties of Construction Materials'. She has held both technical and managerial roles at AWE within team of specialist scientists who measure the mechanical properties of polymer bonder explosives (PBX). Claire is currently the Explosives Technology Centre Production Engineering Manager at AWE.



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SPEAKER INFORMATION

Andy Pettitt, Spex Group, IExPE

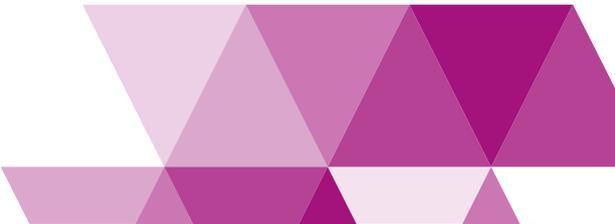
Andy Pettitt, a UK Chartered Engineer, has been working professionally with explosives for over 40 years, in both the commercial and military sectors. He was educated at the Camborne School of Mines and subsequently acquired an MSc in Explosives Ordnance Engineering from the Royal Military College of Science, and a second Masters degree from the University of St Andrews in Terrorism Studies. He is currently completing PhD research into the historical use of IEDs' and evaluating future threat at the UK Defence Academy and is supported by the Ministry of Defence in this work.. For 12 years he held various senior technical, operational and managerial positions with Schlumberger working in over 50 countries before becoming an independent explosives consultant working for a selection of clients including government agencies and specialist military units. His work covers improvised explosives, explosive breaching/methods of entry and the use of explosives underwater. He is a Past President of the Institute of Explosives Engineers and was elected a Fellow in 2000.

Steve Miller, AWE

'The Walls Came Tumbling Down' – A presentation that is designed to entertain the audience and educate them about the different explosive initiation systems used in the commercial sector (movies - i.e. electric ignitors, demolition detonators and shock tube detonators), these are contrasted with those used in defence research and weapon systems (Exploding Bridge Wire Detonators , Exploding Foil/Slapper Detonators). The presentation is centred on the demolition of a 'Temple' at Fatehpur Sikri, India for a feature film called 'The Fall'.The planning of the effect sequence, testing of various elements and the mitigation employed to reduce risks to ALARP levels are discussed and compared with those used in the defense sector.

Steve first started handling explosives proper at the age of 13, while preparing and firing a large public firework display. At 17, he joined the Territorial Army (UK Reserve Forces) and qualified as a Bomb Disposal Engineer, while still at school! Later becoming a high qualified EOD Engineer, Combat Engineer and Ammunition Specialist. This personal and professional interest in explosives lead Steve to pursue membership of the Institute of Explosives Engineers. This wealth of knowledge and understanding now means that Steve is regarded as an expert witness on explosives use and misuse, by the UK courts for whom he has written numerous reports in order to assist them in ensuring justice is served in Britain. In 2016 Steve became a Chartered Engineer through the Institute of Explosives Engineers and is now a mentor and assessor for others seeking similar professional registration.

Early Careers Symposium 2018



SPEAKER INFORMATION

Hugh Bellars, DE&S

At 11:11am on Monday 27 November 1944 one of the largest non-nuclear explosions in history ripped through the Staffordshire countryside. Within RAF Fauld's underground munitions storage depot between 3,500 and 4,000 tonnes of ordnance exploded, obliterating a nearby reservoir, several buildings and killing 70 people. The cause of the disaster was not made clear at the time, but in the ensuing years it was announced that the cause of the explosion was probably a site worker removing a detonator using a brass chisel. This speech explores how the hard won lessons from this devastating accident formed many of the foundations of good safety practice today in explosive storage, processing and handling.

Hugh Bellars is the Head of Weapons Engineering in DE&S, responsible for supporting the delivery, governance and assurance of Safety, Quality and Engineering across a complex portfolio of defence projects in the Weapons Operating Centre. Hugh also has direct responsibility for the Defence Ordnance Safety Group and the Weapons Engineering Team. Hugh has 30 years of experience in Defence acquisition, engineering and science & technology, having worked in a diverse range of fields including explosives engineering, ammunition, armoured vehicles, military aerospace, soldier systems and special projects. Hugh's CV includes roles as a Research Engineer, Quality Assurance Officer, Project Manager, Research Programme Leader, Programme Manager, Systems Architect, Team Leader for a Programme Support Office, the Scientific Adviser for Op HERRICK, a Domain Engineering Function Manager and a Principal Engineer (twice).

SPEAKER INFORMATION

Andy Hubble, Star Fireworks

Mr Andy Hubble MIEpE DGSA – Andy has worked in the UK fireworks industry since 1993. A genuine passion for quality fireworks since his school years led him being appointed as a firework safety adviser to the department of trade and industry (DTI), a role he undertook until he joined Star Fireworks in 2002. Since joining Star Fireworks, the company has seen rapid growth into new sectors such as TV and concerts. Andy takes an active role in representing the UK firework display industry at home and overseas. He became Chairman of the British Pyrotechnics Association in 2008 and has since sat on many government committees considering amendments to firework legislation. Andy is a regular columnist in the Fireworks magazine, a firework related publication delivered to approximately 500 specialist subscribers around the world. He is a keen aviator, and holds a European Union Flight Crew Licence (private pilot's licence), Andy was granted professional membership of the Institute of Explosives Engineers with a specialist area of fireworks in July 2012. Andy is an Expert on firework performance and pyrotechnic design, and his displays have won a number of major competitions. He visits Chinese firework factories on a regular basis to help ensure quality, safety and effects. Andy has been responsible for several major displays since he joined the company, including: Alexandra Palace, London; Big Brother Television Show (Fireworks and Special effects) 2002 to Current; British Firework Championships (Plymouth) Champion of Champions – Winner 2013; Ascot Racecourse; British Fireworks Championships (Plymouth) – Winner 2010; Firework Champions Competition – Winner 2009.

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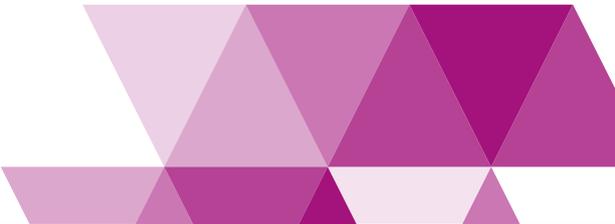
SPEAKER INFORMATION

Sharon Broome OBE, Dstl

Forensic Investigation into the partial explosion on a tube train at Parsons Green in September 2017.

In March 2018 Ahmed Hassan was convicted of attempted murder following the partial detonation of an improvised explosive device (IED) on a London Underground tube train at Parsons Green in September 2017. The Forensic Explosives Laboratory (FEL) provided expert witness statements in relation to the remains of the device, the potential harm that could have been caused had it exploded as well as bomb-making materials seized from Hassan's home address. This presentation will outline FEL's attendance at the scene of the attack and also provide details of the technical work that was carried out in order to produce evidential statements for the UK Criminal Justice System.

Sharon has worked at the Forensic Explosives Laboratory (FEL) in Dstl (Defence Science and Technology Laboratory) since 1991, and currently holds the post of Principal Forensic Investigator. During the last 26 years Sharon has acted as reporting case officer for hundreds of forensic cases, including the July 2005 London bombings, many involving improvised explosive devices, their component parts and post explosion scenes. International experience has been gained during her involvement in incidents in Iraq, Bali, Pakistan, South Korea, Afghanistan and Belgium. Today's Forensic Explosives Laboratory provides a forensic explosives service to the police forces on the UK mainland who are investigating the terrorist or criminal misuse of explosives, and this service extends to cases where British interests are affected overseas by terrorist bombings.



SPEAKER INFORMATION

Matt Brookes, Dstl

Scientific support is a key element of military operations, and Dstl has deployed Scientific Advisers (SCIADs) to a wide range of operations, including Northern Ireland (Op BANNER), Iraq (Op TELIC) and Afghanistan (Op HERRICK). The widespread use of Improvised Explosive Devices (IEDs), as well as conventional weapons, by terrorists and insurgents means that provision of science and technology (S&T) advice relating to protection and detection is extremely important. SCIADs are able to draw on the depth and breadth of expertise across Dstl and wider defence S&T to provide this advice. With a background in explosives detection, I deployed as SCIAD to Op HERRICK 9 in 2008 and Op HERRICK 12 in 2010. This presentation will illustrate, by means of case studies, some of the incidents and issues relating to energetics I encountered during these tours, and how S&T support was delivered to provide solutions to the front line.

Dr Matthew Brookes is a Technical Fellow in the Energetics Analysis Group, Counter-Terrorism and Security Division, Defence Science and Technology Laboratory (Dstl). Prior to joining Dstl's predecessor organisation DERA in 1998, Matt completed a DPhil at Oxford University and a post-doc at the National Research Council of Canada, studying high resolution molecular spectroscopy. Matt's principal focus is science and technology (S&T) to support explosives detection for military and counter-terrorism applications, including aviation security. He deployed to Afghanistan twice (Op HERRICK 9 and Op HERRICK 12) as the UK Scientific Adviser, where much of his work focussed on counter-IED and force protection capabilities.



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SPEAKER INFORMATION

Mark Penney, BAE Systems

LOVA (Low Vulnerability Ammunition) Propellants: Gun propellants for small, medium and large calibre gun systems are used as a gas generator to propel a projectile towards a given target. Current UK conventional gun propellants are based on old Nitrocellulose, Nitroglycerine and/or Nitroguanidine technology which has been around for many decades. LOVA propellants are a new type of propellant technology which has been developed in the UK over a number of years. This technology is based on co-polymers with a nitramine fill and is a big step away from the current conventional propellants. The presentation will take a top level approach to how the R&D team at BAE SYSTEMS have developed the technology from initial concept to qualification ready formulations.

Mark obtained his Chemistry master's degree from Exeter University, UK in 2004 and his PhD in Fluorochemistry from Queen Mary College, University of London, UK in 2008. As part of his studies Mark worked for both GlaxoSmithKline and Pfizer on their drug development programmes. In 2008 Mark took a Design Engineer role at BAE SYSTEMS, Glascoed, UK. Starting out in the LOVA propellant group Mark has also worked on a number of other development programmes at Glascoed and has also been the engineering contact for the UK MoD customer. In 2015 he was promoted to Senior Design Engineer Propellants taking on the wider responsibility of all GUN propellants within the BAE SYSTEMS Land UK Munitions portfolio including the LOVA development programmes.

RFA Security Services Ltd

Explosive Detection Dogs demonstration. Based in Buckinghamshire, our highly trained SIA Licensed Explosives Detection Dog handlers provide a highly professional and robust Counter Terrorist solution.

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SPEAKER INFORMATION

Matt Baldock, Roxel

The Composite Rocket Motor Case (CRMC) is a relatively new technology to Roxel UK. Traditionally, rocket motors comprise of a Steel Strip Laminate (SSL) tube, bonded to 'end rings' at either end of the tube to form the pressure vessel. Composite materials are becoming more and more popular, particularly in the Civil Aerospace and Defence industries for air carriage applications, for their light weight high strength properties. Roxel UK are looking into how the use of carbon fibre reinforced plastics (CFRP) materials can be incorporated into a production rocket motor to maximise performance benefits. Such performance benefits include mass savings (lighter) and/or the ability to hold an increased internal pressure.

Matthew Baldock joined Roxel (UK Rocket Motors) Ltd as a Design Authority in April 2015, following graduation with a BEng (Hons) in Aerospace Systems Engineering from the University of Coventry. After working on a number of major programmes at Roxel, including both ASRAAM and CAMM rocket motors, Matthew now primarily works as Technical Lead on Roxel's carbon fibre rocket motor case programme.

Sarah Bibby, Dstl

Determining the moisture content of explosives in field trials: We had a stakeholder requirement to determine the moisture content of an explosive charge prior to firing in field characterisation trials. It is known that water content within an explosive can have consequences for initiation sensitivity and explosive performance. This presentation summarises research into determining the moisture content without putting the operator at risk. The chosen techniques explored were near infrared spectrometry and capacitive soil probes. The development of these techniques are discussed alongside their calibration, pros and cons, results from the field trial and comparison with techniques currently used for small scale laboratory synthesis and testing.

Sarah studied for her MChem at Newcastle University, graduating in July 2017. She then joined Dstl in September 2017. She works in the Energetics Characterisation and Advice Team which sits in the Energetic Technologies Group in the Counter Terrorism and Security Division.

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SPEAKER INFORMATION

Adam Cooper, AWE

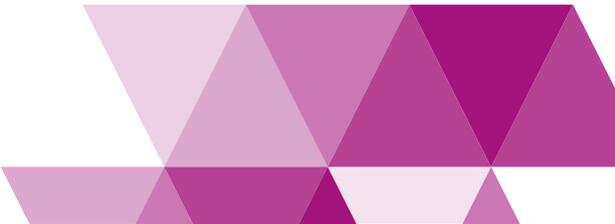
MEDUSA: Multipoint Experimental Diagnostic for Ultrafast Shock Applications: The MEDUSA system is a multi-channel photonic Doppler velocimeter (PDV) system for use in dynamic shock-physics experiments where changes in velocities are required to be measured on nanoscale timescales. The MEDUSA system was originally designed, assembled and commissioned in 2012 and has since been reconstructed in order to provide the full 32 channels desired. This presentation details the underlying principles of PDV systems, their design and assembly, and analysis of the data gathered from explosive shots. This is conducted with regards to a second newly commissioned 32-channel PDV system, MEDUSA 2.

Adam studied a Masters in Chemistry at the University of Sheffield, focusing on the formation of Metal-Organic Nanosheets from layered materials. On leaving Sheffield in 2017, he was offered a position as an Energetic Materials Scientist in the Explosive Trains and Devices team at AWE.

Joe Spooner, Dstl

X-ray Backscatter as a Tool for Security Applications: When an Explosives Ordnance Disposal (EOD) operator arrives at the scene of a concealed, suspicious item, one of their main goals is to render any potential threat safe with the minimum possible impact to the environment around it. In order to be confident that a threat can be dealt with safely, it is paramount that the EOD operator can get as much information as possible before any action is taken. Therefore, the ability to take an X-ray image of such an item has long been an essential capability. I present work by DSTL to develop a single-sided, remotely deployable X-ray backscatter technology which, as an addition to an EOD operator's toolkit, could provide a step-change in capability for through-barrier pre-disruption diagnostics of suspicious items.

Joe graduated from Southampton University in 2015 with Masters in Physics with Astronomy (MPhys). He joined DSTL in September 2015 as part of the new STEM Futures graduate scheme, starting out in the Explosive Detection Group at Fort Halstead. As part of the graduate scheme he went on to do a 9 month secondment at QinetiQ, followed by an internal secondment back at DSTL in the Sensing and Detection Group within the Counter Terrorism and Security Division. He has recently completed the STEM Futures scheme and made the permanent switch to the Sensing and Detection Group.



SPEAKER INFORMATION

Tommy Lodge, Dstl

The talk will introduce the Disc Acceleration Experiment (DAX) and how it is being adopted and developed at Dstl for the characterisation of explosive performance. DAX was developed at Lawrence Livermore National Laboratory (LLNL) by Lorenz, Lee and Chambers in 2010. DAX is a small scale experiment that uses an explosive charge (approximately 15-20g NEQ) to drive a thin metal disc. The velocity of the disc is measured using Heterodyne Velocimetry (HetV) (also known as Photon Doppler Velocimetry (PDV)) and compared to computer simulations. The Jones-Wilkins-Lee (JWL) equation of state parameters for the explosive are then determined through an iterative process of modifying the coefficients in the simulation and comparing them to the data again. Dstl is interested in utilising the experiment to determine JWL parameters for a range of explosives that are not currently well documented. This will allow computer modelling and simulations of a wider range of explosives. A number of trials have been conducted with the aim of understanding how to implement the technique and modify it to fit out requirements. This talk gives both an introduction to the experiment, and presents some preliminary results from trials at Dstl.

Tommy studied Physics at the University of Sheffield, graduating with a Masters in 2012. He then joined Dstl working on operation analysis (predominantly of costs) before moving into his current role as an explosive scientist.



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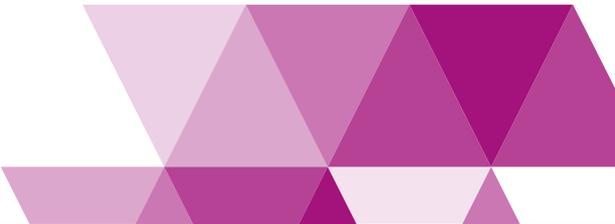
SPEAKER INFORMATION

Purnima Patani, Cranfield University

The Centre of Excellence in Energetic Materials (otherwise known as CoEEM) is a UK Government-driven initiative to pull together and champion essential national capability in energetic materials such as explosives, propellants and pyrotechnics. Led by the Defence Science and Technology Laboratory (Dstl), Atomic Weapons Establishment (AWE) and Defence Equipment & Services (DE&S), CoEEM is working with Cranfield University to delivery this initiative. From strategic nuclear deterrent to fireworks, energetic materials play a vital role in both military and civil applications. CoEEM's main driver is to nurture the next generation of leaders and subject matter experts to support the research, development and manufacture of these functional materials. This needs a diverse multi-discipline workforce consisting of modellers; chemists; engineers; forensic scientists amongst others to meet these challenges. It will do this by utilising wide-ranging, state-of-the-art technology and by drawing on UK-wide organisations, facilities, and academic centres to provide coordinated research, training, test & evaluation and knowledge exchange. A collaboratory where researchers can exchange ideas and resources, drawing on each-other's strengths and provide support in their areas of weakness. We would call all early-career chemists, physicists, engineers and modellers to get involved by visiting CoEEM.org for more information.

Purnima started her career as a Development Scientist in the pharmaceutical industry and has since progressed from technical field sales, marketing and project management to a Senior Director and General Manager. Working predominantly in the therapeutics, biotechnology and life sciences industry, Purnima has experience in mergers and acquisition, business start-ups and change management. More recently she has undergone a career step change into teaching and education and is a member of the academic staff at Cranfield University as well as utilising her past experience to bring CoEEM into fruition.

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SPEAKER INFORMATION

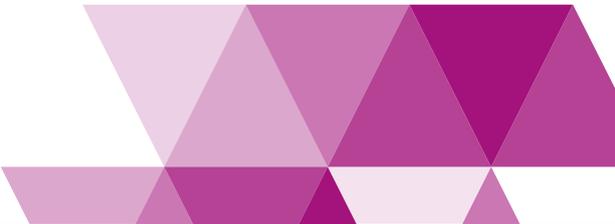
Teele Tuuna, EFEE

The PECCS (Pan European Competency Certificate for Shot firer/blast designers) project, created by EFEE (European Federation of Explosive Engineers) is a certification using a standardised assessment of technical competencies for the shot firer / blast designer profession in European Union. The outcomes of this project: the materials with examining questions, exercises, the course based on these materials and the online courses, will be available on the internet for free on www.shotfirer.eu. In order to maintain a good quality and appropriate educational outcome of the courses we will create a Guidebook for the trainers. The project is funded by European Commission under the Erasmus+ programme.

Teele graduated with a BA of Arts in Social sciences from MCI Innsbruck, Austria. She then completed the Estonian Work Environment Specialist Certification and holds the Vocational Qualification in Explosive Substances and Articles Safety Supervision, Level 3 EQF - London, UK, (formal ISSEE Assessment). Teele currently holds the Estonian Senior Blaster Licence (2 years experience + 5 month Blasters courses in Tallinn Technical University) Level 5 EQF.



Early Careers Symposium 2018



SPEAKER INFORMATION

Christelle Collet, MSIAC

The NATO Munitions Safety Information Analysis Center (MSIAC) is a multinational collaboration that collects, stores, and analyses technical information related to Munitions Safety (MS) and Insensitive Munitions (IM). MSIAC supports its member nations through a variety of products and services. In addition to a core responsibility of addressing technical questions related to Munitions Safety posed by nations, MSIAC has a diverse programme of work aimed at developing and sharing the related underpinning scientific knowledge. This is then applied to support policy implementation and development related to munition safety. Some examples of current activities are given in this presentation, which also provides an overview of proposed workshops and technical meetings. Using input from the nations, MSIAC has developed the plan to ensure that the member nation's needs are addressed in the coming years. The presentation provides a brief description of these with planned dates over the next 6 years.

Christelle graduated from ENSMA engineer school, in Poitiers, France in 2002. She worked as an Engineer at CNES (National Centre for Space studies) in Evry, France between 2002—2003. From 2003—2017 she was a Research Scientist in the Detonics & Safety Laboratory of ArianeGroup's Research Center, in Vert le Petit - Le Bouchet, France, progressively in charge of or involved in all the experimental studies related to explosives and detonics in the Research Center. This work also included Project Manager of Detonics Studies (2005—2014), Head of the Detonics and Safety Laboratory (2011—2015), and Project Manager of propulsion studies since 2015. Currently she is the TSO in Propulsion Technology at MSIAC – NATO HQ, Brussels.



Early Careers Symposium 2018

SPEAKER INFORMATION

Huw Parry, Julie Softley, OME Apprenticeships

Degree Level Ordnance Munition (OME) and Explosive Trailblazer Apprenticeship. The aim of the presentation is to provide details of the OME Apprenticeship programme and enlighten and update the audience on the changes to Apprenticeship in the UK. It provides details on what has been achieved in the OME area and an overview of the OME Apprenticeship programme, who is involved and which Universities are able to provide the course.

Huw Parry has been involved in the development of education and training programmes for the last 30 years. He is passionate about ensuring the availability of career development opportunities are available for all. He has worked with several Universities and Further Education Colleges in England, Scotland and Wales to develop new and innovative programmes/courses. He is currently providing consultative support to the OME sector focusing on the development of new apprenticeship standards.

Julie Softley Joined RARDE in 1989 as an Electronic Apprentice. Her work ventured into the world of Energetics. Having enjoyed a varied career in his area, she recognised the need for structured training within the industry. She is currently working as the Team Leader within the Experimental Techniques Team, Part of the Counter Terrorism and Security Division at Dstl Porton Down.

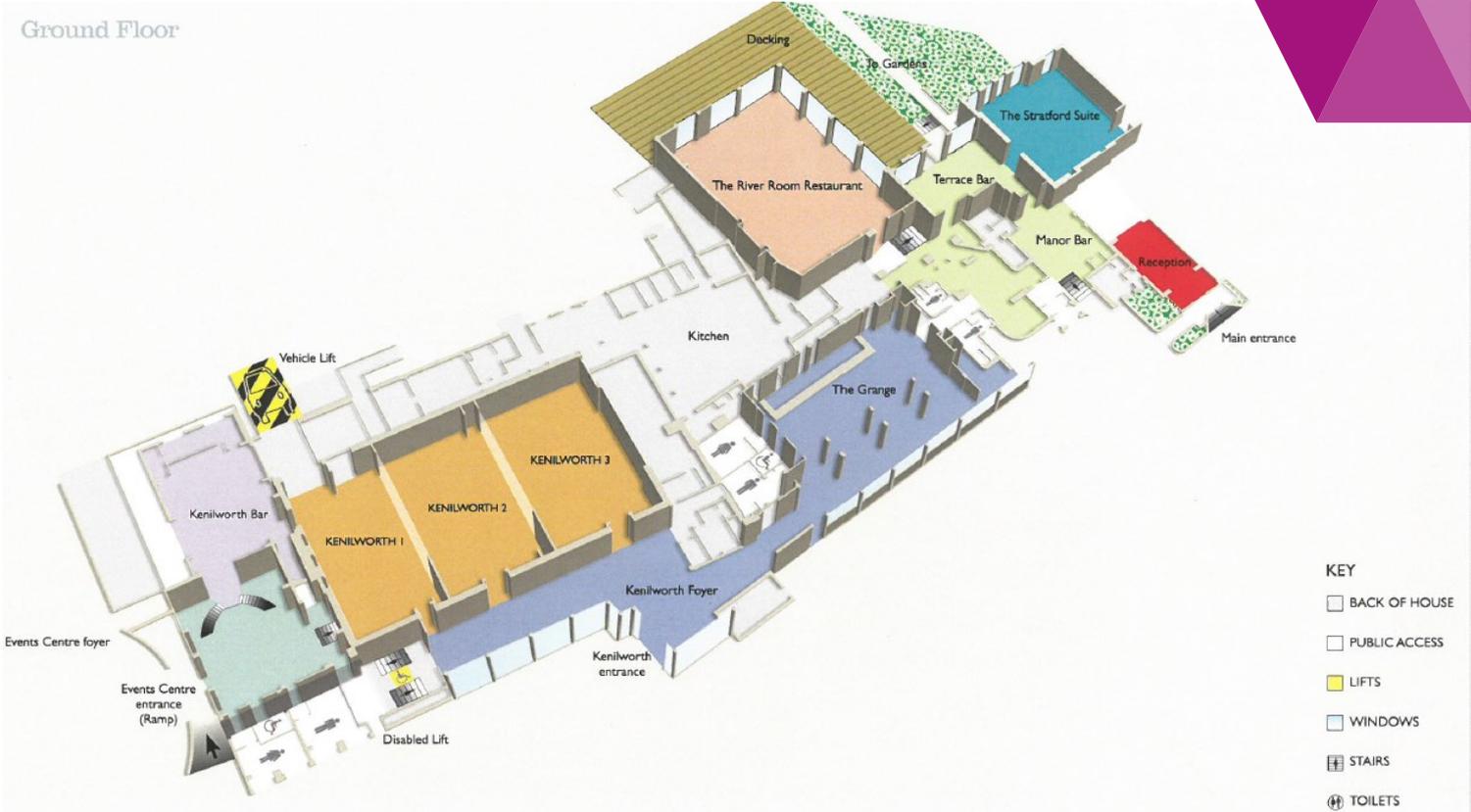
Andy Carr, E&R Trust

The Explosives Educational and Research Trust was formed in 1982 to advance the theoretical and practical education and training of persons engaged in the explosives engineering industry by the provision of training courses and the publication of technical, educational and informative material and the financing of research and the provision of scholarships to assist with courses of study in the field of explosives engineering. Its objectives are to:

- .Provide bursaries to students entering education and research programmes.
- .Award prizes to students who achieve excellence in their courses.
- .Provide financial support to students presenting papers at approved conferences.
- .Provide financial support to students attending approved conferences.
- .Raise the profile of the Trust.
- .Increase the numbers of people joining the IExpE

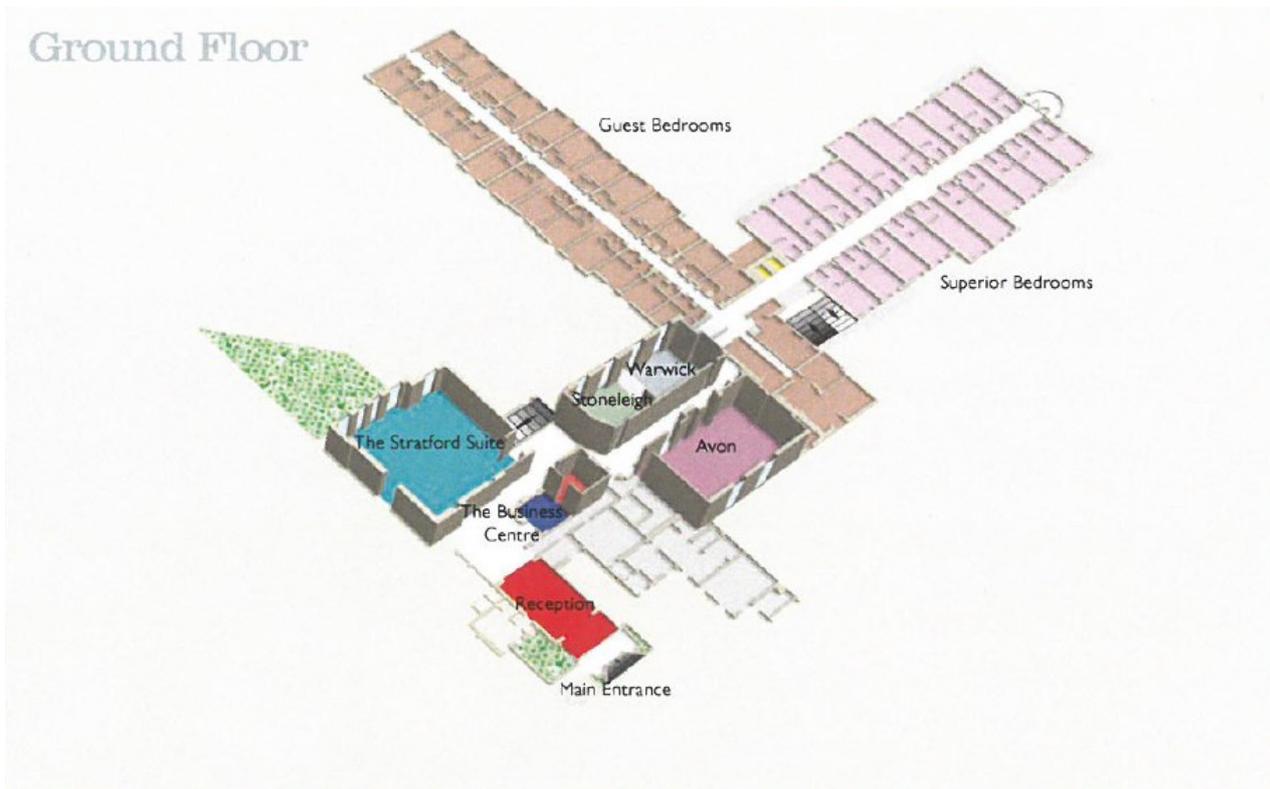
Early Careers Symposium 2018

FLOOR PLAN



Early Careers Symposium 2018

FLOOR PLAN



Early Careers Symposium 2018

HOTEL INFORMATION

Chesford Grange, Kenilworth, Warwick, CV8 2LD

01926859331

From the South

Leave the M40 at Junction 15. Follow the A46 towards Coventry and take the slip road signposted Kenilworth and Leamington Spa (A452). At the roundabout, take the right exit signposted Leamington Spa. Continue for 400 yards and follow signs to the hotel.

From the North

At junction 21 of the M1, follow the M69 towards Coventry and join the A45. Take first junction off and join the A46 towards Warwick. Take the slip road signposted A452. At the roundabout, take the first exit signposted Leamington Spa and follow signs for the hotel.

Nearest train station

Leamington Spa - 8 miles

Warwick - 4 miles

Visit the [trainline.com](http://www.thetrainline.com), your first stop for train tickets

www.thetrainline.com/

Nearest airport

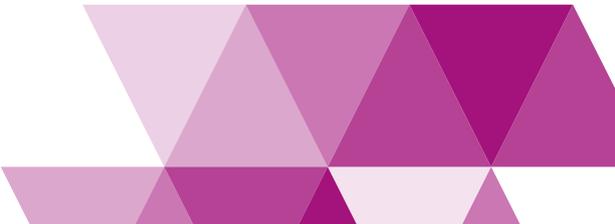
Birmingham International airport - 18 miles

East Midlands Airport - 45 miles

Bus routes

There are several buses which pass the hotel and they stop in Coventry, Leamington and Kenilworth. You can take bus routes U1, U2, U12 and U17.

Early Careers Symposium 2018



ACCESSIBILITY STATEMENT

At Chesford Grange Hotel our aim is to provide the highest standards of service to all our guests and we look forward to welcoming you and making your stay an enjoyable one. Please ensure you let us know when making your reservation if you require a mobility impaired room as some of our Manor House rooms are not accessible by lift. Facilities available for guests with disability needs are as follows:

Arrival

Directions to Chesford Grange Hotel are available in this pack or by calling the hotel on 01926859331. As you arrive at The Chesford Grange Hotel, you will find 650 parking spaces of which 6 are reserved for blue badge holders. These are located to the left of the hotel's main entrance and in front of the event centre entrance. There is also a turning circle located directly outside the main entrance for dropping off and picking up only. There is a level, paved route from the disabled parking into the hotel where the main entrance has an automatic opening door.

If you need assistance with luggage or equipment, our team of porters and concierge are on duty 24 hours.

Reception

The reception desk is located on the ground floor of the hotel in the entrance lobby. The reception desk is 115cm high although check-in can also be completed whilst sitting at a lower desk at the right of the reception which is only 74cm high.

You will be offered a personal check-in service with a full explanation of the hotel's facilities together with a familiarisation tour if required. Assistance is available to help take your luggage to your room.

Reception staff will also brief you on your evacuation policy and please note on your registration card if assistance is needed in the event of an evacuation.

The following accessible aids are available at reception:

- Portable induction loop (for use at reception)
- An evac chair is also available to enable staff to assist with emergency evacuation of disabled, if necessary
- Vibrating pad to assist walking guests with hearing disabilities in the event of a fire alarm

To the right of the reception a corridor will take you to our lifts for bedrooms and leisure club



Early Careers Symposium 2018

ACCESSIBILITY STATEMENT

Bedrooms

In the event of fire alarm activation these rooms have both a sounder and a visual flashing light. In the event of an emergency a member of the team will assist with your evacuation if necessary. Fire evacuation advice is provided on the back of your bedroom door.

If you would like to specifically book one of our access rooms please contact our UK call centre on 08450345777.

Bedroom Inclusions:

- Transfer space and turning of at least 120cm on either side of the bed
- Short pile carpet
- Tiled flooring in bathroom
- Reading lamps provided
- 24 hour room service
- Wheel-in-shower and wall mounted drop down seat with grab rails
- Horizontal and vertical grip rails and emergency cord

Public areas

There are minimal steps or slopes on the main corridors and public areas on the ground floor.

All the restaurant, bar and lounge facilities at Chesford Grange Hotel are located on the ground floor making them easily accessible. All lifts have audible enunciation and tactile buttons at standard height. Accessible toilet facilities are located in the Grange and Events centre. There is fair networking coverage for mobile phones within the hotel.

Conference, Banqueting & Meeting Rooms

Our meeting rooms are located across the hotel and event centre and are fully accessible from reception. Some meeting rooms are on the first floor and can be easily accessed. The Shakespeare meeting rooms can be accessed via lifts or staircase.

Hearing loops are available upon request in advance. Lighting can be dimmed where required.

Please notify your conference or banquet organiser for specific seating or staging requirements.

Accessible toilets are located in the Grange and Events Centre

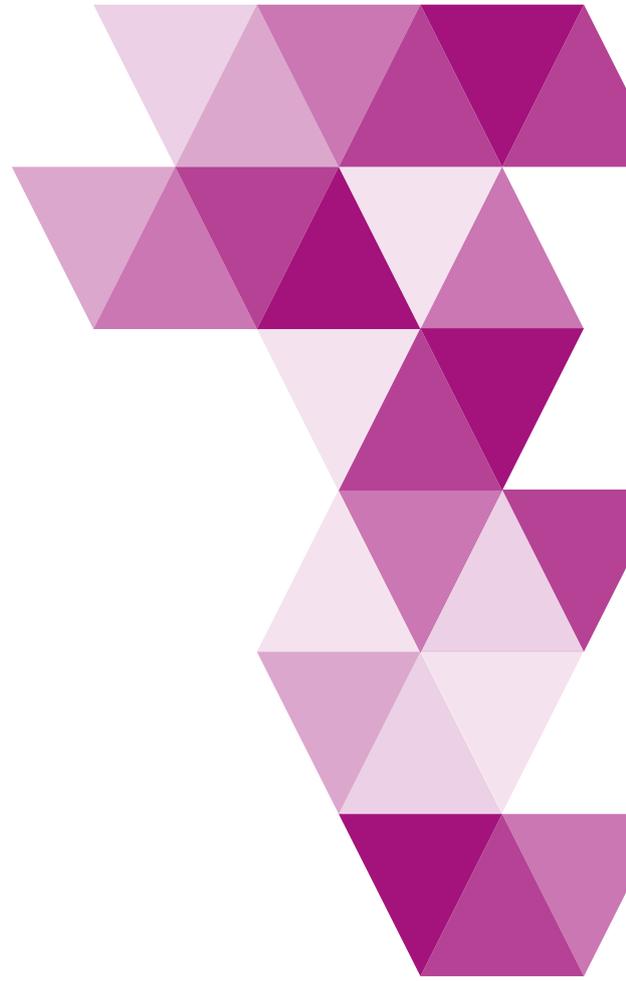
Reflection leisure and Spa

We have leisure club facilities however extra assistance may be required.

Outdoor information

The decked area can be accessed via the river room. There is a Patio area outside the leisure

Early Careers Symposium 2018



9th - 10th July 2018

Chesford Grange Hotel, Kenilworth, Warwick, CV8 2LD



SSSG
Sector Skills Strategy Group

EARLY CAREERS
2018

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