INSPIRE National Intercalators' Research Conference

Saturday 28th October 2017

09:00 – 18:00

VENUE

Cardiff University

Main Building

REGISTRATION

Viriamu Jones Gallery

LECTURE THEATRES

Small Chemistry

Large Chemistry

Wallace

POSTER SESSION & LUNCH

Main Council Chamber

Viriamu Jones Gallery

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Introduction

A very warm welcome to the 3rd **National Intercalators Conference,** hosted by Cardiff University.

The first two National Conferences were held in Bristol (2015) and Exeter (2016). They formed part of the INSPIRE programme funded by the Wellcome Trust and coordinated by the Academy of Medical Sciences to encourage medical, veterinary and dental students to gain experience and understanding of research. The medical, dental and veterinary schools of Cardiff, Bristol, Exeter and Plymouth have worked together on the Inspire scheme since 2013. The first two Intercalators Conferences generated so much enthusiasm, that we have decided to continue the event, hosted and funded in 2017 by Cardiff University School of Medicine. With your registration you will also find a complimentary copy of the 2017 INspire Student Research Magazine which showcases research from our four medical schools.

Exposure to research outside of the curriculum includes Research Evenings, Taster Days, research SSCs and vacation studentships, all of which are supported by the INspire programme. A central element, however, for students considering an interest in research, is the **intercalated BSc** and this has inspired many of our current leading researchers to progress to their current positions. Across the UK, around one third of all medical students intercalate, although in some Schools it is compulsory.

The National Intercalators Conference is open to Medical, Veterinary and Dental students nationwide and aims to:

- Celebrate the work of students who have intercalated across the UK by providing a peer reviewed scientific forum for the presentation of their research
- Offer students considering intercalation the opportunity to obtain information about the programmes available, view the breadth of projects covered, and speak to programme leads as well as past students.

This year we have received more interest than ever, with over 200 registrations and more than 150 abstracts submitted, and all have already been reviewed by four senior academics.

This is your conference and we invite you to **take part in the peer-review process** by scoring oral abstracts as they are presented using the Turning Point software. Please take this opportunity to provide feedback to your peers on the content and nature of their presentation fairly and objectively. Please also take time to visit as many posters as possible, especially between 12:30 and 14:00 when the authors will be available for discussion. From 12:30 – 13:00 **all poster authors will be asked to provide a 1 minute introduction** to their work at their poster, facilitated by a student or academic chair. Prizes for oral and poster presentations will be awarded from 16:45 – 17:00.

The standard of abstracts submitted was outstanding and shows what strength and talent the UK has for the next generation of researchers. Whether you are considering intercalation, have intercalated or are involved in research in other ways, we hope that the Conference inspires you to progress further in your research and feel part of the wider research community.

The conference will feature:

- A keynote address from Huw Williams (EPIC Course)
- Abstracts selected for Oral presentations
- Poster session
- Prizes for each category (voted for by the delegates)
- Intercalators fair (Plymouth, Exeter & Cardiff)
- Intercalation talks (for pre-intercalation students)
- Talks from professionals on how intercalation has influenced their career
- Networking opportunities during lunch and post-conference

Programme Overview

Time	Item	Venue
09:00	Registration & Coffee	Viriamu Jones Gallery
10:00	Welcome from Robert Spencer President of Cardiff University Research Society and Lucy Rhian Jawad, Cardiff University	Large Chemistry Lecture Theatre
10:15	Keynote Speaker Huw Williams (EPIC COURSE) and Callum Twohig, Peninsula Medical School	Large Chemistry Lecture Theatre
11:00	Intercalators' Research Presentations Theme 1: Cancer, Immunology and Infection | Theme 2: Cardiovascular Disease	Theme 1: Large Chemistry Lecture Theatre Theme 2: Small Chemistry Lecture Theatre
12:30	Poster Session	Viriamu Jones Gallery & Main Council Chamber
13:00 – 14:00	Lunch & Intercalators Fair & Poster viewing	Viriamu Jones Gallery & Main Council Chamber
13:30	Intercalation Talks (for pre-intercalation students) Students to Students	Wallace Lecture Theatre
14:00	Intercalators' Research Presentations Theme 3: Neuroscience and Metabolism | Theme 4: Education Mental Health and Surgery	Theme 3: Large Chemistry Lecture Theatre Theme 4: Small Chemistry Lecture Theatre
15:30	Tea & Coffee Break	Viriamu Jones Gallery
15:45	My Career after Intercalation	Large Chemistry Lecture Theatre
16:45	Prize Giving	Large Chemistry Lecture Theatre
17:00	Refreshments & Networking	Viriamu Jones Gallery

Detailed Schedule

09:00 Registration and Coffee

10:00 Welcome to Conference
Robert Spencer, President of Cardiff University Research Society

10:15 Keynote Lecture by:
Huw Williams (EPIC Course)

11:00 – 12:30

Intercalators' Research Presentations

Theme 1: **Cancer, Immunology and Infection (Large Chemistry Lecture Theatre)**

Chair: David Parkinson & Paul McEnhill

Oral Presentations by:

11:00 1 **Linda Loterh**, Peninsula College of Medicine and Dentistry
Optimisation of a pan-fungal qPCR assay for the molecular diagnosis of Microbial Keratitis

11:15 2 **William Drew,** University of Birmingham
Ineffective neutrophil migration in a frail population: Investigating the potential role of PI3K

11:30 3 **Charlie Hall**, Cardiff University
The role of microRNAs in leukaemia cell migration

11:45 4 **Elisabeth Robinson**, Imperial College London
The beneficial role of basophil-derived histamine in acquired immunity to tick infestation

12:00 5 **Tan Yi Jie Gifford**, University of Oxford
Investigating p31comet as a potential CDK1 target in Spindle Assembly Checkpoint regulation

12:15 6 **Bethany Gorman**, University of Birmingham
Investigating the role of enhancers in FLT3-ITD acute myeloid leukemia

11:00 – 12:30

Theme 2: **Cardiovascular Disease** **(Small Chemistry Lecture Theatre)**

Chair: Richard Coward & Imogen John

Oral Presentations by:

11:00 7 **Christian Eichhorn,** Imperial College London
Novel rare variants found in known and candidate LQTS genes using next-generation sequencing techniques

11:15 8 **Mohammed El-Bahnasawi**, Imperial College London
Establishing and refining a CT scanning and 3D printing pathway for congenital cardiac morphology specimens

11:30 9 **Sahil Nichani**, Kings College London
An investigation of the relaxant effects of the synthetic TLR7 agonist Imiquimod on guinea pig airway smooth muscle contractility

11:45 10 **Liam Barrett**, University of Birmingham
The application of age adjusted D-dimers in patients with suspected Venous Thromboembolism (VTE)

12:00 11 **Olivia Connell**, Imperial College London
Risk of stroke associated with acute exacerbations of chronic obstructive pulmonary disease (COPD): a self-controlled case series

12:15 12 **Stephanie Mappouridou,** St George University
Localisation of c-Kit+ Progenitor Cells in Aortas of ApoE-/- Mice

12:30 – 13:00 Poster Session**s** (Viriamu Jones Gallery and Main Council Chamber)

13:00 – 14:00 Lunch served, poster viewings, intercalation fair (Viriamu Jones Gallery and Main Council Chamber)

13:30 – 14:00 Student to Student, Intercalation Talks (Wallace Lecture Theatre)

14:00 – 15:30

Intercalators' Research Presentations

Theme 3: **Neuroscience and Metabolism** **(Large Chemistry Lecture Theatre)**

Chair: David Parkinson & Waqaar Baber

Oral Presentations by:

14:00 13 **Stephanie Worrall**, Kings College London
The impact of a CKI¶ loss-of-function migraine-associated mutation upon peripheral nociception in mice

14:15 14 **Hugo Layard Horsfall**, Kings College London
Investigating histological changes in spinal neuroplasticity following a novel regulated gene therapy approach for treating spinal cord injury

14:30 15 **William Clackett**, University of Dundee
Recurrent fasting promotes metabolic flexibility in C57BL/6J mice

14:45 16 **Robert Spencer**, Cardiff University
The Effects of Genetic Manipulations of the Ras-ERK Cascade on Mouse Behavioural Phenotypes

15:00 17 **Zoe Chandler**, University of Birmingham
Acute Nutritional Ketosis and the Effect of this Unique Metabolic State on Running Performance

15:15 18 **Zofia Tuharska,** University of Dundee
β-amyloid promotes diabetes-like vascular dysfunction in mice

Theme 4: **Education, Mental Health and Surgery** **(Small Chemistry Lecture Theatre)**

Chair: Richard Coward & Ka Chun (Jack) Suen

Oral Presentations by:

14:00 19 **Matthew O'Donnell**, Queens University Belfast
The design, construction and validation of an innovative and low-cost ophthalmotrope: a kinetic anatomical teaching apparatus to demonstrate the movements of the eye

14:15 20 **Clare Tracey**, Queens University Belfast
Impact of area based socioeconomic deprivation and related nutritional and lifestyle factors on bone health

14:30 21 **Maisie Thrift**, University of Birmingham
Attitudes of men and women towards modern and traditional methods of contraception in Iquitos, Peru

14:45 22 **Arina Madan**, University of Birmingham
The contribution of vocal emotion perception deficits to sarcasm perception deficits in individuals with high schizotypy

15:00 23 **Ali Abdullah**, Cardiff University
Ankle cartilage is more resilient to cytokine-induced catabolism than knee cartilage: A potential target for prevention of knee arthritis?

15:15 24 **Callum Donaldson**, Imperial College London
Pre-clinical evaluation of a novel coating-implant combination for the future of hip Resurfacing

15:30 Tea & Coffee Break (Viriamu Jones Gallery)

15:45 My Career after Intercalation (Large Chemistry Lecture Theatre)
Chair: Professor Colin Dayan & Robert Spencer

15:45 Talk 1: Dr Ryan Preece, F1
16:00 Talk 2: Lowri Phillips, CMT
16:15 Talk 3: Professor Richard Coward, Consultant
16:30 Discussion

16:45 Prize Giving presented by Professor Colin Dayan & Robert Spencer (Large Chemistry Lecture Theatre)

17:00 Refreshments & Networking (Viriamu Jones Gallery)

18:00 Departure

Opening Abstracts

Lucy Rhian Jawad, Year 4, Cardiff University

Intercalated Degrees- Gain vs. Pain

OBJECTIVES

One third of UK medical students complete an intercalated degree, however with compulsory intercalated degree places rising, the number of students choosing to intercalate is falling. This study investigated the influences which affected the decisions by medical students to undertake an intercalated degree, and whether these affected their choice of medical school.

METHODS

Focus groups with students who had undertaken an intercalated degree and those who had not explored the reasons behind their decisions. Transcripts were thematically analysed and used to construct an online questionnaire sent to fourth year medical and intercalating students (n=365).

RESULTS

Students chose to intercalate to help their careers, to de-stress, to encourage personal development and because they were cost-effective. Students chose not to intercalate because of financial constraints, loss of social networks, not believing it would benefit their future careers and because of academic concerns. The questionnaire (response rate 57%) revealed that most felt that the intercalated degree was a good opportunity to get a degree in a year (94%), but remained reluctant to do so because they did not want to spend an extra year at university (69.7%). Two thirds of respondents (62%) considered intercalated degrees at the time of their UCAS application.

CONCLUSIONS

In future, medical school applicants should be made aware of the benefits and drawbacks of doing an intercalated degree, both prior to their applications to university and whilst they are still at medical school, allowing individuals to make an informed decision as to whether opting to intercalate is the right decision for them.

Authors: Lucy Rhian Jawad, Professor David Wilson

Opening Abstracts

Callum Twohig, Year 6, Peninsula Medical School

A systematic literature review & triage tool for prehospital extracorporeal cardiopulmonary resuscitation in London

OBJECTIVES

1. Review the literature for the benefit of extracorporeal-CPR (eCPR) over conventional-CPR in regard to survival and neurological outcome
2. Review the literature of the cardiac arrest parameters of survivors and non-survivors in whom eCPR has been undertaken
3. Produce a prehospital eCPR triage tool for use in London

METHODS

Literature searches of studies comparing eCPR to cCPR, and the clinical parameters of both survivors and non-survivors of eCPR were performed. The primary outcome examined was neurologically-intact survival at discharge. A secondary analysis focussed on the resuscitation details that may be associated with survival in patients who receive eCPR.

RESULTS

948 studies were included. 16 matched inclusion criteria and were analysed further. eCPR demonstrated statistically improved survival with a good neurological outcome over cCPR. Furthermore, having a witnessed arrest, with bystander-CPR, an initial shockable cardiac rhythm and a reduced low-flow time were associated with increased survival from eCPR. The initiation of pre-hospital eCPR was proposed as a method of reducing the low-flow time and producing better outcomes. To implement this, a potential triage tool for pre-hospital eCPR in London was created.

CONCLUSION

Higher survival was noted from eCPR compared to cCPR with a greater number of patients having a good neurological outcome. Factors associated with survival from eCPR were identified and using recommendations from the papers in this review, a pack was produced for the potential triage and initiation of pre-hospital eCPR in London with the primary aim of reducing the low-flow time and further improving outcomes from eCPR.

Authors: Callum J Twohig, Dr Ben F Singer

Abstracts for Oral Presentations

Theme 1: **Cancer, Immunology and Infection**

1 **Linda Loterh**, Year 5, Peninsula College of Medicine and Dentistry

Optimisation of a pan-fungal qPCR assay for the molecular diagnosis of Microbial Keratitis

OBJECTIVE
Microbial Keratitis (MK) of fungal aetiology is a major cause of blindness in developing countries. Standard diagnostic testing for MK involves microscopy and culture, both of which lack sensitivity. Polymerase Chain Reaction (PCR) is a highly sensitive and rapid technique which can result in a faster diagnosis. This study aims to identify the optimal extraction of fungal DNA from ocular swabs, and evaluate the performance of qPCR against a composite reference standard (CRS) of positive microscopy or microbial culture result.

METHODS
Fungal culture material was used to optimise DNA extraction, measuring parameters such as swab incubation, presence of glass beads, and sample storage conditions. Ocular swabs of corneal ulcers were obtained from 125 patients presenting to a tertiary hospital in Tanzania. Fungal DNA was extracted from ocular swabs, and qPCR was performed, with positive amplicons visualised by gel electrophoresis.

RESULTS
Optimal fungal DNA yields as quantified by qPCR were obtained by a prolonged swab incubation during DNA extraction, and bead-beating in the absence of beads. The positivity rates for fungal diagnosis by culture, microscopy and PCR were 51.9%, 28.1% and 62.5% respectively. The calculated sensitivity of the qPCR assay in comparison to the CRS was 78.5%, and a specificity of 54.2%.

CONCLUSIONS
The study demonstrates that qPCR is a sensitive technique for the diagnosis of fungus in MK in comparison to the CRS. A rapid qPCR assay has the potential to be used as an adjunct to standard microbiological tests, where a positive result may provide evidence for early initiation of treatment.

Authors: Linda Loterh, Dr Tamsyn Derrick

Theme 1: **Cancer, Immunology and Infection**

2 **William Drew**, Year 5, University of Birmingham

Ineffective neutrophil migration in a frail population: Investigating the potential role of PI3K

OBJECTIVES
Frailty is a medical syndrome describing aspects of unhealthy ageing. Immunosenescence is hypothesised to play a crucial role in the pathogenesis of frailty. Heightened phosphoinositide 3-kinase (PI3K) signalling has been causally implicated in dysregulated neutrophil functions associated with age[1]. Our research set out to characterise the migratory phenotype in frail older patients, to distinguish whether aberrant neutrophil migration is purely a feature of age or associated with frailty.

METHODS
Three populations were recruited: healthy young (HY=21), healthy old (HO=21) and frail older (FO=17) people. Neutrophil migration was studied using an Insall chamber and time-lapse light microscopy towards Interleukin-8 (IL8) with and without selective Class I PI3K inhibitors or vehicle controls. Neutrophil migratory paramaters were calculated and compared across groups.

RESULTS
Age, without frailty, was not associated with a reduction in neutrophil velocity (Mean (±SD) HY 1.00µm/min (±0.90), HO 0.90µm/min (±0.58), p=0.683). Frail patients exhibited reduced neutrophil velocity compared to HY (Mean difference= -0.50µm/min, p=0.043) and HO (Mean difference= -0.41µm/min p=0.024) participants.
PI3Kβ inhibition improved neutrophil migratory accuracy compared to vehicle control in only the FO patients (Mean difference = +0.18au (p=0.028) of a smaller sub-cohort (HY n=10 HO n=10 FO n=9).

CONCLUSIONS
Frailty is more associated with neutrophil immunosenescence than age. PI3K inhibition can restore aspects of neutrophil function in frailty and therefore may offer a new therapeutic strategy for improving the innate response to infection in frail individuals.

REFERENCES
1. Sapey E, Greenwood H, Walton G, et al. Phosphoinositide 3-kinase inhibition restores neutrophil accuracy in the elderly: toward targeted treatments for immunosenescence. Blood. 2014;123(2):239-248.

Authors: Mr. William Drew[1], Dr. Daisy Wilson[1], Dr. Elizabeth Sapey[2].

Theme 1: **Cancer, Immunology and Infection**

3 **Charlie Hall**, Year 6, Cardiff University

The role of microRNAs in leukaemia cell migration

Background
The lymph node is the key site of proliferation in chronic lymphocytic leukaemia (CLL). CLL cells migrate to these proliferative centres, hence the lymph node microenvironment and migration to it are therapeutic targets. microRNAs act to sculpt the post-transcriptional landscape by preventing translation and degrading their target mRNAs.

Objectives
Investigate microRNA expression in a circulating model of CLL cell migration using primary cells, hypothesising that microRNAs regulate the mechanisms of migration.

Methods
A model vasculature lined with endothelial cells was used to circulate CLL patient peripheral blood mononuclear cells (PBMCs) for 48 hours. A population of PBMCs migrate from the circulating compartment (CIRC) into the extravascular compartment (EVS). Samples from CIRC and EVS were sent for microRNA sequencing (n=4). Eight selected microRNAs were then validated by RT-qPCR (n=5).

Results
799 microRNAs were significantly different ($p<0.05$) between CIRC and EVS. miR-126, miR-142, miR-148a and miR-150 were highly expressed and had the largest and most significant fold changes (FC) between CIRC and EVS. These microRNAs were selected for validation by RT-qPCR. miR-126 (Log_2FC -5.1, $p<0.01$), miR-142 (Log_2FC -5.9 $p<0.05$), miR-150 (Log_2FC -11.7, $p<0.0001$) and miR-155 (Log_2FC -2.54, $p<0.01$) were significantly downregulated in EVS. The fold changes obtained by RT-qPCR were similar to those obtained by sequencing.

Conclusions
We demonstrate large differences in global microRNA expression between CLL cells in the circulation and those that migrate. We validated four microRNAs by RT-qPCR. miR-150 changes impressively, is an adverse prognostic factor and a potential therapeutic target.

Authors: Charlie Hall, Dr Elisabeth Walsby, Dr Lucy Newbury, Dr Robert Andrews, Dr Robert Jenkins, Dr Paul Brennan

Theme 1: **Cancer, Immunology and Infection**

4 **Elisabeth Robinson**, Year 5, Imperial College London

The beneficial role of basophil-derived histamine in acquired immunity to tick infestation

OBJECTIVES
Due to increasing incidence of tick borne disease and rising resistance to acaricides, future hopes of tick control relies on the development of novel immunological control methods. Some animal species display acquired immunity to ticks on repeat infestation, and it has been demonstrated in mice that selective ablation of basophils, which accumulate at tick bite sites, abolishes this resistance. This study aimed to identify and investigate the role of basophil-derived histamine in acquired tick immunity.

METHODS
To investigate the effector mechanism and the possible role of histamine in this acquired resistance, we conducted tick infestations, using Haemaphysalis longicornis ticks, on histidine decarboxylase knockout (HDC-KO) and wild type (C57BL/6) mice. Then, histamine competent wild type basophils and HDC-KO basophils harvested from previously infested mice were transferred to naïve wild type mice. Finally, we administered intradermal histamine to the tick bite site of naïve wild type mice during tick infestation alongside selective histamine receptor antagonists.

RESULTS
Firstly, HDC-KO mice did not develop tick immunity on second infestation. Secondly, transfer of basophils but not mast cells from previously infested histamine competent to naïve wild type mice could confer resistance to ticks. Finally, administration of histamine could confer tick immunity independent of basophil presence, and this resistance is mediated through action on histamine receptor 1.

CONCLUSION
In conclusion, basophil-derived histamine is an essential molecule in the development of tick immunity the mechanism of which utilises histamine receptor 1. This study is one of the first definitive articles illustrating a beneficial role of histamine in ectoparasitic infection.

Authors: Elisabeth Robinson, Soichiro Yoshikawa, Hajime Karasuyama

Theme 1: **Cancer, Immunology and Infection**

5 **Tan Yi Jie Gifford**, Year 4, University of Oxford

Investigating p31comet as a potential CDK1 target in Spindle Assembly Checkpoint regulation

OBJECTIVES
The Spindle Assembly Checkpoint (SAC) is a conserved surveillance system capable of halting mitotic progression until chromosomes are properly attached to ensure timely and equal segregation. A weakened SAC has been implicated in cancer cells. The SAC prevents the cell from transiting to anaphase via the inhibition of the Anaphase Promoting Complex / Cyclosome (APC/C). The APC/C is required for the degradation of Cyclin B1, a key activator of Cyclin-Dependent Kinase 1 (CDK1), and the abrogation of CDK1 activity coincides with mitotic exit. The inhibition of CDK1 activity has been shown to accelerate APC/C activation, but currently the CDK1 phosphorylation target is not known. p31comet is implicated in SAC inactivation upon bipolar attachment, and is being investigated as a cancer therapeutic target. Building on the theory that p31comet acts as an inhibitory 'cap' on the SAC, others have shown that phosphorylation of p31comet weakens this antagonistic binding with the SAC. In this project, the hypothesis was pursued that p31comet could be a CDK1 phosphorylation target, and CDK1 inhibition triggers a positive feedback loop that reinforces SAC silencing, resulting in accelerated APC/C activation and mitotic exit.

METHODS
We generated clones of plasmid vectors containing p31comet, and conducted transient transfections of p31comet and immunofluorescence imaging of cells to identify p31comet localisation. We also synchronised cells with nocodazole and conducted a time lapse where we quantified changes in intracellular protein concentration, and Phos-Tag gels to confirm their phosphorylation status at different mitotic stages.

RESULTS
We showed that p31comet localises to the SAC during pro-metaphase. p31comet is also phosphorylated during mitosis. However, p31comet phosphorylation does not turn over at the metaphase to anaphase transition.

CONCLUSIONS
Our results show that p31comet is not the CDK1 target responsible for accelerated mitotic exit. They also suggest that previous literature on the phospho-regulation of p31comet needs to be re-assessed before its therapeutic potential can be harnessed.

Authors: Tan Yi Jie Gifford

Theme 1: **Cancer, Immunology and Infection**

6 **Bethany Gorman**, Year 5, University of Birmingham

Investigating the role of enhancers in FLT3-ITD acute myeloid leukemia

OBJECTIVES
Enhancers are DNA sequences that recruit transcription factors, to increase gene transcription. Regions of open chromatin, known as DNase I hypersensitive sites (DHSs), are required to access DNA. Aberrantly accessible enhancers can result in genetic dysregulation. Previous genome-wide analyses have identified deregulated genes specific to FLT3-ITD acute myeloid leukemia (AML), with local *de novo* DHSs[1]. We aimed to investigate whether these FLT3-ITD-specific DHSs were enhancing elements

METHODS
FLT3-ITD-specific DHSs were identified through genome-wide analysis of 38 patient samples. The DHSs were inserted upstream to a Luciferase gene in a reporter vector, and select transcription factor binding sites were mutated through site-directed mutagenesis. Jurkat T cells were transfected with either wild-type or mutant plasmids, before being stimulated with PMA and calcium ionophore or left unstimulated. Relative luciferase was measured as a marker of enhancing activity.

RESULTS
Three FLT3-ITD-specific DHSs were identified from analysis of DNase-seq and RNA-seq data. The DHSs found +20 kilobases to the NFIX gene, and -3 kilobases to the MDFI gene caused a significant increase in luciferase activity, following stimulation ($p<0.001$). Plasmids with mutations in AP-1, RUNX-1, and ETS-1 binding sites all showed significant decreases in luciferase activity, relative to their wild-type counterparts. The SCARA3 +35kb DHS did not show a substantial increase in luciferase activity.

CONCLUSIONS
We identified two *de novo* FLT3-ITD-specific DHSs which acted as enhancing elements, when activated by inducible transcription factors. This finding functionally validated previous genome-wide analyses , further outlining the epigenome of FLT3-ITD AML.

REFERENCES
(1) Cauchy P, James SR, Zacarias-Cabeza J, Ptasinska A, Imperato MR, Assi SA, et al. Chronic FLT3-ITD Signaling in Acute Myeloid Leukemia Is Connected to a Specific Chromatin Signature. Cell Rep. 2015;12(5):821-36.

Authors: Bethany Gorman[1], Dr Daniel Coleman[2], Professor Peter Cockerill[2].

Theme 2: **Cardiovascular Disease**

7 Christian Eichhorn, Year 5, Imperial College London

Novel rare variants found in known and candidate LQTS genes using next-generation sequencing techniques

Background
Congenital Long QT syndrome (LQTS) is a cardiac channelopathy predisposing children and adults to sudden cardiac death. Identification of causative mutations in affected individuals can lead to effective risk stratification and management guidance with dramatic changes to survival rates. To date, 15 genes have been found to be causative of congenital LQTS; however, 20% of congenital LQTS cases remain genetically elusive in cause. The aim of this study was to identify novel nonsynonymous variants in 15 known and 85 candidate genes in congenital LQTS in a Japanese population.

Methods
This study evaluated the genetic material of 405 Japanese individuals clinically diagnosed with congenital LQTS who carried no known variants in any of the 15 known causative congenital LQTS genes. Their genetic material was harvested and underwent target deep sequencing using a gene-targeted, multiplex PCR primer panel with manufactured primers for 15 known and 85 candidate congenital LQTS genes. A bioinformatic approach was used to call and filter variants. Detected nonsynonymous variants were then experimentally validated by Sanger sequencing.

Results
Our study found seven novel true positive heterozygous nonsynonymous variants in six known congenital LQTS genes; furthermore, 12 variants were found in 10 candidate genes. Two new variants were found in the gene *PI4KA,* the functional properties of which can easily be linked to congenital LQTS.

Conclusion
Target deep sequencing identified nonsynonymous variants that may play an important role in increasing arrhythmia susceptibility in patients. Identified variant-containing candidate genes need to be studied further in the laboratory to elucidate novel LQTS-causing mechanisms

Authors: Christian Eichhorn, Dr Ryo Watanabe, Prof Toshihiro Tanaka

Theme 2: **Cardiovascular Disease**

8 **Mohammed El-Bahnasawi**, Year 5, Imperial College London

Establishing and refining a CT scanning and 3D printing pathway for congenital cardiac morphology specimens

Introduction:

The cardiac morphology department at the Royal Brompton hospital has numerous donated hearts, with and without rare congenital heart disease, which are fixed and kept in a museum. Dissection of these precious specimens is destructive and does not allow for the repeated use of the hearts for educational purposes. Three-dimensional printing is a technology on the rise in the medical field, which potentially has a role to play in solving this problem. This project will assess the optimal scanning protocol and 3D printing pathway for explanted hearts.

Methods:

Explanted lamb and pig hearts were acquired and CT scanned in different positions, with various contrasts and immersion times in contrast. The hearts were rescanned two weeks after contrast washout. The images obtained were processed and reconstructed to print 3D replicates using various 3D printers and material. A Likert-type questionnaire was conducted, assessing accuracy and usefulness of these models; completed by radiologists, pathologists and cardiac surgeons.

Results/Discussion:

The optimal preparation for the explanted hearts prior to scanning was to soak in iodine-based contrast 'Iomeron' for 120 hours and scan suspended in air. This resulted in the optimal tissue differentiation and image quality. Five 3D heart models were produced, and the translucent VeroClear one was preferred by the professionals. The models were deemed accurate with an average satisfaction score was 3.8/5, whilst the pathologists' score was 5/5.

Conclusion:

The scanning protocol and printing pathway produced models of sufficient accuracy and resolution for reliably replicating the preserved hearts in the morphology department.

Authors: M El-Bahnasawi, K McCarthy, S Padley, T Semple

Theme 2: **Cardiovascular Disease**

9 **Sahil Nichani**, Year 4, Kings College London

An investigation of the relaxant effects of the synthetic TLR7 agonist Imiquimod on guinea pig airway smooth muscle contractility

OBJECTIVES
Asthma is a globally prevalent condition of the airways involving bronchoconstriction and airway inflammation. Toll-like receptors are pathogen-recognition receptors involved in stimulating immune responses within the airways during exacerbations of asthma. The recently discovered smooth muscle relaxant effects of Imiqumod, otherwise an immunomodulatory drug, were investigated further in this study. Through stimulation of the Toll-like receptor 7, this drug could potentially dampen airway inflammation and relax constricted airway smooth muscle.

METHODS
Small segments of guinea pig trachea were suspended under 1g tension in oxygenated Krebs-Henseleit solution (95%O_2/5%CO_2) and maintained at 37^{o}C. Various spasmogens were used to contract the tracheal tissue. The relaxation induced by cumulative concentrations of imiquimod was measured. Maximum relaxation was calculated (%E_{max} papaverine) and expressed as mean±S.E.M. Pharmacological inhibitors were administered to identify the mechanism behind imiquimod's smooth muscle relaxation.

RESULTS
Synthetic TLR7 agonist imiquimod induced, to varying degrees, dose-dependent relaxation in tissue contracted with spasmogens. Imiquimod's relaxant potency proved to be inferior to salbutamol. This relaxation was shown to be independent of nitric oxide and prostaglandins as neither the guanylate cyclase inhibitor ODQ nor the cyclo-oxygenase inhibitor (COX) indomethacin were able to block this relaxation.

CONCLUSIONS
Imiquimod induced near-complete relaxation of pre-contracted guinea pig airway smooth muscle *in vitro*, which highlights its potential use as a bronchodilator. *In* vivo experiments are necessary to explore this relaxation further and additional studies are required to investigate imiquimod's mechanism as a smooth muscle relaxant.

Authors: Sahil Nichani, Domenico Spina

Theme 2: **Cardiovascular Disease**

10 **Liam Barrett**, Year 6, University of Birmingham

The application of age adjusted D-dimers in patients with suspected Venous Thromboembolism (VTE)

OBJECTIVES
The *primary outcome* was to determine the diagnostic test characteristics of the application of an age adjusted D-dimer (AADD) cut off point in patients (>50 years) with suspected VTE, presenting through the Emergency Department (ED).
Secondary outcomes included proportional imaging reduction and the potential cost and time savings associated with this strategy.

METHODS
Study design: Retrospective diagnositic cohort study
All patients >50 years old evaluated for possible VTE who presented to the ED over a consecutive 12-month period between January and December 2016 with a positive D-dimer result. Clinical assessment records and reference standard imaging results were followed up and coded as VTE positive or negative.

RESULTS
During the study period, there were 2132 positive D-dimer results. 1236 patients received reference standard investigations. A total of 314/1236 (25.1%) results would have been coded as true negatives as opposed to false positive if the AADD cut off point had been applied, suggests 314 reference standard tests would have avoided. The AADD cut off had comparable sensitivity to the current cut off with no reduction in specificity, sensitivities in DVT 99.28% (95% CI 96.06-99.98%), compared to 97.72% for PE (95% CI 91.94% to 97.72). There were 3 potential false negative results.

CONCLUSIONS
In patients with suspected VTE with a low pre-test probability, the application of AADD appears to increase the proportion of patients in which VTE can be excluded without the need for reference standard imaging, associated with substantial reduction in anticoagulation treatment, investigations and cost/time savings. To date no index cases have missed.

Authors: Liam Barrett: Final Year Medical Student University of Birmingham, Daniel Horner: Consultant Emergency Medicine and Intensivist, Tom Jones: FY1

Theme 2: **Cardiovascular Disease**

11 **Olivia Connell**, Year 5, Imperial College London

Risk of stroke associated with acute exacerbations of chronic obstructive pulmonary disease (COPD): a self-controlled case series

OBJECTIVES
COPD patients are at increased risk of cardiovascular disease. Previous studies have suggested acute exacerbations of COPD (AECOPD) are associated with an increased risk of stroke. We aimed to characterise the size and duration of any increased risk of stroke post-AECOPD and factors that modify the risk.

METHODS
Using data from the Clinical Practice Research Datalink linked with Hospital Episode Statistics and Office of National Statistics, we conducted a self-controlled case series. Fixed-effects conditional Poisson regression was utilised to estimate the incidence rate ratio (IRR) of stroke in the 91-day period post-AECOPD compared with stable periods. The 91-day period was also segmented into time periods, which were compared with stable periods, to determine the duration of the stroke risk post-AECOPD. We stratified by various factors to identify which modified this risk.

RESULTS
3,466 COPD patients had at least one AECOPD and a first stroke during the study period. We observed an increased risk of stroke in the 91-day period post-AECOPD versus stable periods (IRR=1.47, 95% CI:1.36-1.59), which peaked on days 4-7 (IRR=1.93, 95% CI:1.57-2.37), not returning to baseline until after 91 days post-AECOPD. This increased risk was significant for ischemic strokes only (IRR=1.51, 95% CI:1.39-1.65). The risk of ischemic stroke was significantly modified by exacerbation phenotype/number, angina diagnosis and aspirin prescription.

CONCLUSIONS
There is a 1.47-fold increased risk of stroke in the 91-day period post-AECOPD versus stable periods, which peaks on days 4-7. Our findings may inform future interventions including introducing aspirin to reduce this risk in COPD patients.

Authors: Olivia Louise Connell, Kieran Rothnie, Jennifer Quint

Theme 2: **Cardiovascular Disease**

12 **Stephanie Mappouridou**, Graduate, St George University

Localisation of c-Kit+ Progenitor Cells in Aortas of ApoE-/- Mice

OBJECTIVES
Haemodynamic forces vary significantly along the vascular tree, resulting in a non-uniform distribution of atherosclerotic lesions. Atherosclerosis, a chronic, lipid-driven inflammatory process develops at predictable sites of the vasculature near branches and bifurcations where the endothelium is exposed to turbulent flow. Increasing evidence suggests the participation of stem cells in atherosclerosis, and they are thought to be involved in both vessel remodelling and repair. Secondary to this, we hypothesized that
progenitor cells are more prevalent in areas of lesion formation.

METHODS
To examine our hypothesis we assessed the intima layer of aortas from four 6-month-old transgenic ApoE-/- mice, known for their spontaneous development of atherosclerosis, and four wild type (WT) agematched controls. We focused on c-kit as a stem/progenitor marker.

RESULTS
C-kit positive cells were largely identified in the aortic root and the aortic arch of the Apo E-/- mice and near branching vessels, areas predisposed to lesion development. When compared to relatively atherosclerotic resistant WT mice, the number of c-kit cells was significantly higher in the ApoE-/- mice.
Difference in c-kit numbers was also significant between the different parts of the aorta, with progenitor cells being predominant in the aortic arch.
Functionally, isolated c-kit positive cells demonstrated their potential in multi-lineage differentiation by the expression of both endothelial and smooth muscle cell markers.

CONCLUSIONS
Our results suggest that c-kit positive progenitor cells are present in the intima of atherosclerotic lesions and that they can potentially be involved in endothelial repair or vessel wall remodelling

Authors: Stephanie Mappouridou

Theme 3: **Neuroscience and Metabolism**

13 **Stephanie Worrall**, Year 6, Kings College London

The impact of a CKI∂ loss-of-function migraine-associated mutation upon peripheral nociception in mice

OBJECTIVES:

Casein kinase I delta (CKIδ) is a serine-threonine specific protein kinase which plays a key role in many intracellular processes. A known loss-of-function mutation in the CKIδ gene (CKIδ^{T44A}) results in reduced enzyme activity, and has been implicated in migraine pathogenesis. This study aimed to determine the effects of the CKIδ^{T44A} mutation upon peripheral nociception. Specifically, whether the CKIδ^{T44A} mutation results in nociceptive hypersensitivity, and could therefore contribute to sensitisation in migraine.

METHODS:

We compared the acute and tonic nociceptive responses of CKIδ^{T44A} transgenic mice (n = 9) and their wild type littermates (n = 8) to thermal, mechanical, and inflammatory stimuli. Three different nociception assays were used: the hot-plate test, the von Frey test, and the bi-phasic formalin test.

RESULTS:

In the formalin test, CKIδ^{T44A} transgenic mice exhibited significantly reduced acute phase nociceptive responses compared to their wild type littermates (p = 0.0019). No significant difference was observed in the tonic phase responses to formalin between the two groups (p = 0.91). There was no significant difference in the thermal (p = 0.88) or mechanical withdrawal thresholds (p = 0.66) of CKIδ^{T44A} mice and wild type mice, as measured by the hot-plate and von Frey tests respectively.

CONCLUSIONS:

These results indicate that the CKIδ^{T44A} mutation does not lead to peripheral hypersensitivity. However, data presented here and elsewhere collectively suggest that whilst the CKIδ^{T44A} mutation does not result in nociceptive hypersensitivity under normal conditions, it may contribute to sensitisation in migraine.

Authors: Stephanie Worrall, Philip Holland (supervisor), Lauren Strother (supervisor)

Theme 3: **Neuroscience and Metabolism**

14 **Hugo Layard Horsfall**, Year 6, Kings College London

Investigating histological changes in spinal neuroplasticity following a novel regulated gene therapy approach for treating spinal cord injury (Neuroscience iBSc)

OBJECTIVES
Spinal cord injury (SCI) leads to severe functional deficits and poses a significant burden to the individual and society. Current treatment options are limited; there are no curative therapies. An important pathological consequence of SCI is the 'glial scar'. A molecule found in the extracellular matrix (ECM) is associated with the glial scar, and acts to prevent axonal regeneration. The main inhibitory component of the ECM molecule are sugar sidechains. A bacterial enzyme, chondroitinase ABC (ChABC), degrades the sugar sidechains, thus permitting axonal sprouting and subsequent functional improvement. Recent work assessed a novel, temporally-regulated gene delivery system using a lentiviral vector, where administration of doxycycline induces ChABC expression (dox-i-ChABC).

1. Investigate whether dox-i-ChABC treatment confers effective sugar digestion and whether this is influenced by duration of treatment.
2. Investigate anatomical plasticity following contusion injury and whether this is affected by temporally regulated dox-i-ChABC treatment. Specifically, analyze pattern of glutamatergic innervation.

METHODS
Histologically investigate the effects of dox-i-ChABC following clinically relevant *in vivo* cervical contusion injury in female adult rats spinal cord tissue, comparing short-term (2.5 weeks) vs long-term (8 weeks) ChABC expression on sugar sidechain digestion and neuroplasticity.

RESULTS
We demonstrate extensive sugar sidechain digestion after short- and long-term dox-i-ChABC treatment. Additionally, we establish that only long-term dox-i-ChABC treatment confers increased density of excitatory (glutamatergic) neurotransmitter transporters within spinal grey matter.

CONCLUSIONS
A novel finding: long-term dox-i-ChABC treatment resulted in increased glutamatergic density above the injury site, which may underlie the improved functional recovery observed and pave the way for future research.

Authors: H. Layard Horsfall, E. Burnside, E. Bradbury

Theme 3: **Neuroscience and Metabolism**

15 **William Clackett**, Year 4, University of Dundee

Recurrent fasting promotes metabolic flexibility in C57BL/6J mice

OBJECTIVES
Recurrent fasting (RF) is a weight loss technique increasing in popularity. Although its metabolic benefits in overweight and obese individuals is known, a greater insight into how RF improves an individual's metabolic profile is required. We aimed to study the effect of RF on metabolism by investigating body weight alterations, lipid metabolism, insulin signalling and tissue morphology during a diet controlled experimental study in C57BL/6J mice.

METHODS
Adult male C57BL/6J mice were either fed a standard chow diet ad libitum or underwent a 5:2 RF regime, where no food was consumed by mice for 24 hours during 2 non-consecutive days of the week. Body weights, body composition and venous blood samples for triglyceride and glucose quantification were obtained during a 20-week intervention period. After 20 weeks, indirect calorimetry was carried out and tissues harvested.

RESULTS
RF mice were similar weights compared to control mice fed ad libitum, despite consuming less food. RF mice displayed hyperphagia during fed periods, hypometabolism during fasting periods, increased carbohydrate oxidation during fed periods and increased fat oxidation during fasting periods. RF mice exhibited lower fasting plasma glucose and triglyceride levels, and an improved response to oral glucose tolerance tests. No changes in lipid handling genes were observed under refeeding conditions, however hepatic and white adipose tissue demonstrated macrophage infiltration of an undetermined polarisation.

CONCLUSIONS
RF promotes metabolic flexibility in standard chow fed C57BL/6J mice, which is associated with an improved metabolic profile and macrophage infiltration in hepatic and white adipose tissue.

Authors: William Clackett

Theme 3: **Neuroscience and Metabolism**

16 **Robert Spencer**, Year 4, Cardiff University

The Effects of Genetic Manipulations of the Ras-ERK Cascade on Mouse Behavioural Phenotypes

OBJECTIVES

To assess the importance of components of the Ras-ERK signalling cascade in fear and spatial memory in mice. Specifically, these are Ras-guanine releasing factor 1 (RasGRF1) and extracellular signal-regulated kinase 1 (ERK1).

METHODS

Behavioural data were analysed to identify the memory capabilities of mice with varying genotypes, namely RasGRF1 knockout, RasGRF1 overexpression, RasGRF1 loss of function mutation and ERK1 knockout. Animals were tested on passive avoidance, requiring retention of contextual fear information and dependent on amygdala function; and Morris water maze (MWM), a hippocampus-dependent spatial memory task. Basal activity levels and motor ability were also assessed using locomotor activity and rotarod tasks to exclude deficits in these domains.

RESULTS

RasGRF1 mutants performed similarly to wild-type in MWM, indicating that RasGRF1 is not required for spatial memory. In passive avoidance, RasGRF1 KO caused significant impairment, and RasGRF1 OE produced significant enhancement in fear memory. Additionally, ERK1 KO animals had a near-significant enhancement of fear memory. These differences were seen solely in long-term memory.

CONCLUSIONS

There is a role for the Ras-ERK cascade in consolidation of memory. Given that RasGRF1 manipulations did not affect spatial memory, Ras must be activated by other means at the hippocampus, as it has previously been shown that Ras activation is a requirement of hippocampus-dependent learning. Enhanced fear learning with ERK1 KO is counterintuitive, given that increased Ras signalling is known to enhance fear memory. However, there is evidence to suggest that ERK2 is the more important isoform, where ERK1 may have a role in regulating ERK2 phosphorylation. This demonstrates molecular dissociation between memory forms, which is of clinical significance in that specific disruption of fear memory has potential for the treatment of post-traumatic stress disorder.

Authors: RJ Spencer, Prof R Brambilla

Theme 3: **Neuroscience and Metabolism**

17 **Zoe Chandler**, Year 5, University of Birmingham

Acute Nutritional Ketosis and the Effect of this Unique Metabolic State on Running Performance

OBJECTIVES

To analyse the effects of novel exogenous beta-hydroxybutyrate (βHB) supplementation on plasma concentration, exercise metabolism and performance.

METHODS

Using a double-blind repeated-measures design, 11 well trained male runners (height 1.67±0.5 m, body mass 66.7±7.0 kg, $\dot{V}O_{2peak}$ 63.1 ± 4.9 $ml \cdot kg^{-1} \cdot min^{-1}$) consumed either a 'ketone' drink (KET: 60g carbohydrate 0.5 $g \cdot kg^{-1}$ body mass of 1,3-butanediol) or carbohydrate control drink (CHO: 60g carbohydrate + extra carbohydrate to ensure calorie-matched). Each visit consisted of 30 minutes of seated 'rest', 60 minutes submaximal treadmill run at 75% $\dot{V}O_{2peak}$, and a 5km pace-blinded, self-controlled performance time trial. Throughout the trial, metabolic markers for the effect of ingestion of KET or CHO and time taken to complete time trial in seconds were measured.

RESULTS

Difference was demonstrated between trials for plasma βHB concentrations ($p<0.001$), and βHB was significantly larger in KET compared to CHO on all measurements following ingestion of 1,3-butanediol, reaching peak concentration of 1.05 $mmol \cdot L^{-1}$ ($p<0.05$). This increase in βHB concentration was not associated with any change in plasma lactate concentrations ($p=0.974$) or plasma glucose concentrations ($p=0.122$), and there was no difference between trials in time taken to complete 5km running performance ($p=0.742$).

CONCLUSIONS

Supplementation with beta-hydroxybutyrate (βHB) significantly increased plasma βHB concentrations, however this was not associated with decreases in lactate or glucose concentrations, and no improvements on 5km running performance were demonstrated.

Authors: Zoe Chandler

Theme 3: **Neuroscience and Metabolism**

18 **Zofia Tuharska**, Year 4, University of Dundee

β-amyloid promotes diabetes-like vascular dysfunction in mice

OBJECTIVES:

Beta-amyloid (Aβ), is a key contributor to the development of Alzheimer's disease (AD) and has also been shown to play a role in conditions epidemiologically associated with AD such as cardiovascular disease and type 2 diabetes (T2D). β-secretase (BACE1) mediates the rate-limiting step of Aβ production. Our preliminary data has shown increased plasma Aβ levels in both mouse models and humans with diet-induced obesity (DIO) and T2D. Aβ has also been shown to deposit within atherosclerotic plaques and increased plasma Aβ is associated with a diminished vasodilatory response to acetylcholine iontophoresis. The aim of this study was to determine the mechanisms behind this impaired vascular responsiveness in DIO/T2D mice and whether it is reversible through BACE1 inhibition.

METHODS:

Using conventional immunoblotting we analysed components of nitric oxide signalling pathways in wild type (C57Bl/6) and BACE1 -/- mice maintained on regular chow or high fat diets and cohorts of mice infused with Aβ or a BACE1 inhibitor.

RESULTS:

Our results demonstrate that increasing Aβ levels in mice, by feeding an obesogenic diet or by infusion, reduces bioavailable nitric oxide (NO) thus promoting vascular dysfunction. This is mediated by decreased eNOS activity in a PKB dependent manner. Such complications could be completely reversed by reducing BACE1 activity, either by genetic removal or treatment with an inhibitor.

CONCLUSIONS:

Our results suggest that Aβ is a major contributor to obesity/T2D induced vascular dysfunction and that reducing Aβ levels by means of pharmacological BACE1 inhibition may be a novel therapeutic strategy for vascular complications in obesity/T2D.

Authors: Z. Tuharska, P. Meakin, C. McCaffery, F. Khan, M.L.J. Ashford

Theme 4: **Education, Mental Health and Surgery**

19 **Matthew O'Donnell**, Year 4, Queens University Belfast

The design, construction and validation of an innovative and low-cost ophthalmotrope: a kinetic anatomical teaching apparatus to demonstrate the movements of the eye

OBJECTIVES
Examining extraocular eye movements is important in assessing nerve function and consequences of injury. In medical education there is a lack of movable, interactive and accurate models of the eye that demonstrate activation of the muscles along with the resultant eye movement. The goal of this project is thus to create an innovative, high-fidelity and low-cost model of the extraocular muscular movements of the human eye, or put simply an "ophthalmotrope", to enable other institutions to recreate the ophthalmotrope for educational use. A further goal was to investigate the educational value of the ophthalmotrope amongst students (n=9) and experts (n=5).

METHODS
Experts and students provided their views of the ophthalmotrope using a Likert scale questionnaire and a focus group discussion. The effect of the ophthalmotrope on students' knowledge was measured with multiple choice questions (MCQ's) before and after the intervention to assess any changes. Similarly, the effect of the ophthalmotrope on students' confidence of knowledge was measured using a Likert scale questionnaire to assess any changes.

RESULTS
The innovative ophthalmotrope model was constructed at a low-cost of £45.57. Experts and students appreciated how the ophthalmotrope enhances their visuospatial understanding of the complex anatomical architecture. Posttest MCQ scores and student confidence improved.

CONCLUSIONS
The capability of the ophthalmotrope to provide successful understanding, appreciation and application of three-dimensional information relating to the anatomy of the eye amongst students and experts has been highlighted. Institutions can now access an ophthalmotrope for effective low-cost simulation teaching; their addition will inevitably aid better understanding of the eye movements.

Authors: Matthew O'Donnell

Theme 4: **Education, Mental Health and Surgery**

20 **Clare Tracey**, Year 4, Queens University Belfast

Impact of area based socioeconomic deprivation and related nutritional and lifestyle factors on bone health

Objective:
To determine the association between area-based socioeconomic deprivation and osteoporosis in older people living across the island of Ireland.

Methods:
The total study sample consisted of 3338 participants recruited from Northern Ireland (n=1994) and the Republic of Ireland (n=1344). Bone health was assessed using dual-energy X-ray absorptiometry (DXA) and individuals were identified as having normal bone mineral density, osteopenia or osteoporosis, in accordance with international standards established by the WHO. Based upon official indicators of socioeconomic deprivation in Northern Ireland and the Republic of Ireland respectively, participants were assigned a deprivation score based on the smallest administrative area in which they lived, and classified into quintiles ranging from least to most deprived.

Results:
In the total study sample (n=3338), 734 individuals were classified as living in the most deprived quintile of area deprivation (quintile 5). Compared to all other quintiles, these individuals had the greatest incidence of osteoporosis. Within Northern Ireland, participants living in an area of greatest deprivation (quintile 5) had a two-fold greater risk of osteoporosis (OR 2.171; CI 1.241, 3.799; P 0.007) after adjustment for covariates. However, this association was not observed in the Dublin based cohort (the Republic of Ireland).

Conclusion:
The results of this study show that area-based socioeconomic deprivation is a risk factor for osteoporosis in older adults. These findings warrant further investigation into the contributing factors involved in the relationship between socioeconomic deprivation and osteoporosis, so that appropriate strategies can be developed to alleviate this risk. The findings from this study suggest a need for bone screening programmes targeted at individuals living in the areas with the greatest levels of deprivation.

Authors: Clare Tracey, Dr Michelle Clarke & Dr Catherine Hughes

Theme 4: **Education, Mental Health and Surgery**

21 **Maisie Thrift**, Year 6, University of Birmingham

Attitudes of men and women towards modern and traditional methods of contraception in Iquitos, Peru

OBJECTIVES

Despite global progression in contraceptive use and subsequent reductions in unwanted pregnancies and maternal and infant mortalities, Peruvian use of the less effective traditional methods (i.e. periodic abstinence, withdrawal) remains unusually high. This study aimed to investigate the use, knowledge, access and attitudes to contraceptives in Iquitos, assess factors encouraging traditional method use and compare men and women.

METHODS

Questionnaires were distributed in a health clinic in Iquitos to Spanish-speaking participants of the ages 18-49 who were sexually active and heterosexual.

RESULTS

Of the 133 questionnaires analysed, 76.9% of participants were female and the median age was 29 years. Views were similar between men and women. Higher educational attainment was significantly associated with fewer children ($\chi 2=39.7$, $p<0.001$) and knowledge of more contraceptive methods ($\chi 2=15.2$, $p<0.05$). 69.2% of those in a relationship (N=104) used contraception. Seventy participants (53.8%) cited no barriers to accessing contraception, yet substantial numbers reported unavailability and side effect fears. Many participants were unsure of contraceptive effectiveness and side effects; nonetheless, those that were sure were often correct. Participants approved of family planning and emergency contraception. Although stigma surrounding abortion was apparent, 14.9% (N = 19) reported having had an induced abortion, whilst 11.3% (N = 15) preferred not to say.

CONCLUSIONS

Confidential access to contraception and education within schools and throughout the wider community may help to further knowledge and modern method use, particularly amongst the young. Abortion is illegal in Peru in most cases; medical and legal support for women choosing to abort is lacking.

Authors: Maisie Thrift, Dr Rui Duarte, Dr Gilles de Wildt, Dr Graciela Meza.

Theme 4: **Education, Mental Health and Surgery**

22 **Arina Madan**, Year 5, University of Birmingham

The contribution of vocal emotion perception deficits to sarcasm perception deficits in individuals with high schizotypy

OBJECTIVES:

The concept of a schizotypy spectrum as opposed to schizophrenia being viewed as a distinct categorical illness is now more widely accepted. Whilst the presence of both vocal emotion perception deficits and sarcasm perception deficits in individuals with high schizotypy has been separately established in the literature, the contribution of vocal emotion perception deficits to sarcasm perception deficits in these individuals, has not be examined. This study used a novel auditory measure of vocal emotion perception to determine whether high schizotypy individuals have greater impairments in sarcasm perception, and a higher bias towards interpreting sarcastic statements as more sincere than intended by the speaker (BTS), as well as having a faster reaction time to sarcasm (SRT).

METHODS

A cross-sectional, observational study was conducted including 134 participants, aged 16-65 years. A total schizotypy score consisting of nine schizotypal traits was measured using the Schizotypal Personality Questionnaire. Sarcasm perception impairment, bias towards sincerity and sarcasm reaction time were calculated using vocal emotion perception software.

RESULTS

The negative schizotypal trait “no close friends” was a significant predictor of sarcasm perception error (R^2=0.319, p=0.001) and BTS (R^2=0.209, p=0.001), although total schizotypy score was not. There was a weak positive association between total schizotypy score and sarcasm perception error score (n=134, r=0.194, p=0.05).

CONCLUSIONS

This is the first study to demonstrate that vocal emotion perception deficits contribute to sarcasm perception impairments in individuals with the schizotypal trait “no close friends”. Future larger longitudinal studies are needed to show that these deficits remain consistent over time.

Authors: Arina Madan

Theme 4: **Education, Mental Health and Surgery**

23 **Ali Abdullah**, Year 5, Cardiff University

Ankle cartilage is more resilient to cytokine-induced catabolism than knee cartilage: A potential target for prevention of knee arthritis?

Objectives

The variation in prevalence of osteoarthritis has been hypothesised to result from the differential responsiveness of joints to catabolic stimuli. Therefore, the aim of this study was to determine whether ankle cartilage is less susceptible to the catabolic effects of pro-inflammatory cytokines when compared to the knee.

Methods

Human cartilage explants were taken from the talar domes (n=12) and the femoral condyles (n=7) following surgical amputation. Explants were cultured in the presence or absence of either a combination of high concentration cytokines (100ng/ml TNFα, 10ng/ml OSM, 5ng/ml IL-1α) or low concentration cytokines (2ng/ml TNFα, 0.2ng/ml OSM, 0.1ng/ml IL-1α). Media was analysed up to 28 days. Sulphated glycosaminoglycan (sGAG) release to the media and expression levels of nitric oxide and prostaglandin E_2 (PGE_2) were measured.

Results

Significantly more sGAG was lost from knee cartilage explants exposed to 100ng/ml TNFα (22.2% vs 13.2%, P=0.01) and 100ng/ml TNFα in combination with 5ng/ml IL-1α (27.5% vs 16.0%, P=0.02) compared to sGAG release from the ankle; low cytokine concentrations did not affect sGAG release. All high concentration cytokine treatments resulted in production of more nitrite and PGE_2 compared to low concentrations; however, no significant differences between the knee and ankle were noted for nitrite although there was significantly more PGE_2 production in knee cartilage.

Conclusions

Cartilage explants from the knee and ankle have a divergent response to stimulation by pro-inflammatory cytokines. This may account for the higher prevalence of knee osteoarthritis compared to ankle osteoarthritis and provide a future pharmacological target for treatment.

Authors: Abdullah AAN, Miller A, Hague C, Blain E

Theme 4: **Education, Mental Health and Surgery**

24 **Callum Donaldson**, Year 5, Imperial College London

Pre-clinical evaluation of a novel coating-implant combination for the future of hip resurfacing

Objectives: A vacuum plasma spray (VPS) titanium and hydroxyapatite (HA) coated ceramic hip resurfacing prosthesis could allay concerns surrounding current metal-on-metal implants and allow reintroduction of the operation. This study aimed to characterise the mechanical properties of the coating on such a newly developed prosthesis to ensure efficacy and safety of the device which will be used *in vivo.*

Methods:
The tensile and static shear strength of the coating were measured at multiple sites on different sizes of the hip resurfacing acetabular cup component. Primary outcome was comparison between the coating mechanical properties and FDA provided threshold values. Secondary outcomes looked to identify any difference in coating mechanical properties between peripheral and central implant sites as well as between small and large sized implants.

Results:
Mechanical properties of the acetabular cup coating proved higher than FDA threshold values both during tensile (median 35.53MPa, IQR 31.76-38.65 vs threshold 22MPa, P<0.001) and static shear testing (median 22.94MPa vs threshold 20MPa). No difference in the tensile strength of the coating strength was seen between peripheral and central sites on the implant (median 35.90MPa, IQR 31.65-38.84 vs median 34.95MPa, IQR 32.39-35.54, P=0.83) nor between small and large sized implants (median 35.47MPa, IQR 31.30-35.53 vs median 36.07MPa, IQR 32.72-39.27, P=0.23). The static shear strength of the coating could not be fully analysed due to test limitations.

Conclusions:
Results suggest proof of concept for VPS titanium/HA coated ceramic, with mechanical properties of the coating surpassing FDA threshold values and showing uniformity across the tested implants.

Authors: Callum J Donaldson, Camilla Halewood, Susannah Clarke, Justin P Cobb

Abstracts for Poster Presentations

Theme 1: Education and Training

1 Ruairidh Morgan, Year 4, Imperial College London

Enhancing and Validating an Augmented Reality Headset for Clinical Levels of Accuracy and Precision in Total Hip Arthroplasty

2 Hana El-Sbahi, Year 5, Barts and the London

How can we use distance learning to teach medicine in Syria?

3 Tanvi Raghvani, Barts and The London

A confusion of roles and their effects: Student as a learner, Student as a patient, Doctor as teacher, Doctor as a caregiver

4 Zara Akhtar, Year 4, Queen Mary University of London

The use of Medical Infrared Thermography (MIT) in jumping athletes with Patella Tendinopathy, before and after eccentric and concentric loading exercises: A Case Control Study.

5 Katherine Maskell, Year 4, Brighton and Sussex Medical School

The usefulness of health education materials in GP waiting room: a cross-sectional study

6 Rosemarie Patterson, Year 4, Brighton and Sussex Medical School

Selection for medicine: an evaluation of a change in selection process at a UK medical school and a review of applicants' experiences. Does the process help to widen participation in medicine?

7 Angelos Mantelakis, Year 6, St George's University of London

The application of 3D printed, kinaesthetic models for undergraduate medical anatomy teaching

8 Humayoon Zaheen, Newcastle University

Role-Modelling in Undergraduate Medical Education

9 Luke Western, Year 3, Imperial College London

Validation of Enhanced Augmented Reality Technology for Acetabular Cup Implant Orientation Simulation: A Randomised Controlled Trial

Abstracts for Poster Presentations

Theme 2: Cancer

10 Bertram Marks, Year 6, Newcastle University

Importance of DOCK2 and ELMO1 in oesophageal adenocarcinoma cell migration

11 Conor S Jones, Year 6, University of Exeter

DNA methylation in rectal cancer: Validation of a genome wide study

12 Saman Mukhtar, Year 4, University of Leeds

Is the inhibition of voltage-gated sodium channels using phenytoin a potential therapy in poor prognosis breast cancer?

13 Oliver Denton, Year 4, Cardiff University

Genetic mechanisms in polyposis of the bowel

14 Katie Brown, Year 4, University of Leicester

Fertility preservation decisions in young women with breast cancer

15 Eleni Frisira, Year 3, Barts and the London

The proteasome inhibitor, NPI-0052, induces apoptosis of medulloblastoma cells

16 Jenny Olsson, Year 5, Imperial College London

The effects of the tumour suppressor OPCML on the intracellular trafficking of the receptor tyrosine kinase AXL in ovarian cancer cells

17 Winnie Lam, Year 3, Kings College London

Are variants of RhoU differentially localised in PC3 cells?

18 Lorna Almond, Year 6, University of Birmingham

Development of a Multi-Drug Implant for the Treatment of Glioblastoma Multiforme

19 Oliver Topping, Year 4, University of Birmingham

In vitro investigation of the growth and metabolic characteristics of pilocytic astrocytoma cell lines.

Abstracts for Poster Presentations

Theme 3: Infection

20 Aidan Butler, Year 4, University of Birmingham

Serum opsonisation of non-typeable Haemophilus influenzae to neutrophil phagocytosis may be impaired in COPD and Alpha-1 Anti-Trypsin Deficiency

21 Ngan (Tanya) Ta, Year 4, Norwich Medical School

Evaluation of Outcome Assessment for Chronic Rhinosinusitis

22 Simon Williams, Year 4, University of Birmingham

Assessing the efficacy and biocompatibility of a novel antimicrobial peptide coating for titanium implants used in cranioplasty.

23 Thomas Richardson, Year 6, University of Birmingham

A Systematic Review of Ebola Treatment Trials to Assess the Extent to Which They Adhere to Ethical Guidelines

24 Harriet Semple, Year 4, University of Liverpool

Cross sectional survey to find prevalence of antimicrobial resistance in Staphylococcus species from layer hens in the Kurunegala district of Sri Lanka.

25 Rebecca Best, Year 4, Cardiff University

The prevalence of sepsis in the surgical assessment unit and its association with outcome

26 Jay Lakhani, Year 5, Imperial College London

Syndromic Surveillance for the Prediction of Cardiac-Surgical Site Infections (SSIs)

27 Joanna Ismail, Year 5, Imperial College London

The Management of Tuberculosis in Renal Transplant Patients

28 Pawel Rozwadowski, Year 5, Cardiff University

A Re-analysis of an Observational Study Exploring the Impact of Antibiotic Prescribing on Recovery from an Acute Cough/ Lower Respiratory Tract Infection (LRTI) in Europe Using Causal Inference.

Abstracts for Poster Presentations

Theme 4: Immunology, Haematology, Cancer

29 Charlotte Wenban, Year 4, Barts and The London Medical School

Comparison of existing and novel antibodies for CD160; a potential target for Chronic Lymphocytic Leukaemia

30 James Thorburn, Year 4, University of Aberdeen

The effect of Bscl2 knockout in adiponectin- expressing cells on the Infrapatellar Fat Pad in mice.

31 Hannah Palfrey, Year 5, University of Birmingham

More than a feeling: How ought compassion should be conceived and enacted in end of life care? A patient perspective

32 Hannah Morgan, Year 6, Imperial College London

Gut Microbiome and Diet in Children with Crohn's Disease

33 Rose Stahl, Year 4, University of Bristol

Hodgkin lymphoma, variation in pattern of disease EBV association with relapse rates highest in young adults.

34 Manan Patel, Year 4, Barts and the London School of Medicine

Effect of chondrocyte expansion on primary cilia

35 Isabelle Tighe, Year 5, Newcastle University

The impact of niacinamide supplementation on respiratory activity and oxidative stress

36 Sophie Rees, Year 4, Cardiff University

Establishing an Erythrophagocytosis Assay

37 Renos M. Jeropoulos, Year 3, Barts and the London School of Medicine

Sirtuin-Activating Treatment during Monolayer Culture Can Increase Extracellular Matrix Synthesis of Expanded Chondrocytes

38 Geeth Silva, Year 4, Imperial College London

To review the role and effectiveness of UK organ donation committees and make recommendations for improvement

Abstracts for Poster Presentations

Theme 5: Cardiorespiratory Disease

39 Stephanie Rees, Year 4, Leicester Medical School

The Role of Second Messengers in Glucose Mediated Vasoconstriction

40 Anmol Patel, Year 5, Imperial College London

Investigating the contractile function of β-adrenergic receptors in mouse atrial cardiomyocytes

41 James Duff, Year 6, Imperial College London

Mechanical load contributes to the maintenance of the conductive properties of myocardial slices in culture

42 Lucy Chambers, Year 4, University of Leicester

Effects of personal air pollution exposure on asthma symptoms, lung function and airway inflammation

43 Sara Abou Sherif, Year 4, Kings College London

Is Heart Rate Response a Reliable Marker of Adenosine-Induced Coronary Hyperaemia?

44 Jonathan Sheldrake, Year 4, University of Leicester

Spontaneous Coronary Artery Dissection and its Association with Heritable Connective Tissue Disorders

45 Gokul Ramana Lakshmipathy, Year 4, Queen's University Belfast

Systematic Evaluation of Multiple breath washout quality in Bronchiectasis'

46 Ben Wilkinson, Year 5, University of Birmingham

Phenotypic rescue of long-QT cardiac phenotype in larval Zebrafish Cav 1.2 mutant using the repurposed therapeutic chlorzoxazone, measured by larval zebrafish ECG recording

47 Miguel Sequeira Campos, Year 4, Kings College London

Catalytic metal pools & oxidative stress in the bronchial tissue of patients with Chronic Obstructive Pulmonary Disease (COPD)

48 Alice Pickering, Year 4, University of Edinburgh

Are neutrophils the good or bad guys after myocardial infarction?

Abstracts for Poster Presentations

Theme 6: Neuroscience

49 Irem Ishlek, Year 4, Barts and The London School of Medicine and Dentistry

The expression of Sensory Neurones and Ion Channels that Mediate Pain in the Colonic Mucosa of IBS Patients

50 George Chapman, Year 5, Barts and The London School of Medicine and Dentistry

Using 'big brother' to identify behavioural changes in preclinical neurotrauma models

51 Joanne Stock, Year 5, Keele University

Are there commonalities between the molecular changes that occur in spinal muscular atrophy and amyotrophic lateral sclerosis?

52 Rebecca Lai, Year 4, UCL Great Ormond Street

Videotelemetry in Sturge-Weber Syndrome: benefits and risks

53 Hannah Downing, Year 6, Peninsula College of Medicine and Dentistry

Devastating Brain Injury – a cross sectional analysis of patients with DBI presenting to UK Emergency Departments

54 Imogen Hutchings, Year 6, University of Exeter

Tired of the size-weight illusion? The role of fatigue in a test where size really does matter.

55 Monisha Edirisooriya, Year 4, University of Edinburgh

Is Intelligence Associated with the Presence of Internalising Traits in Adolescents with Autism Spectrum Disorder? A Meta-analysis.

Abstracts for Poster Presentations

Theme 7: Renal, Metabolic and Endocrine disease

56 Aaron Bell, Year 4, Queens University Belfast

Diabetic Eye Screening in Young Adults with Type 1 Diabetes in Northern Ireland

57 Emma Gorst, Year 4, Queens University Belfast

Bioinformatic model for the prediction of severity of disease causing mutations in the enzyme galactokinase (GALK1)

58 Pooja Shah, Imperial College London

Interim review in Acute Kidney Injury

59 Sonal Modhwadia, Year 5, University of Leicester

Using an immortalized cell line to study muscle wasting in Chronic Kidney Disease

60 Claire Guy, Year 4, Cardiff University

Development of an assay for chitotriosidase in bloodspots to detect and monitor patients with Gaucher disease

61 Rishi Sarania, Year 4, University of Leicester

The Role of Macrophage Phenotype in the Progression of IgA Nephropathy

62 Nick Wilson, Year 4, Cardiff University

The Association between the Extracellular Matrix (Hyaluronan) and Adipogenesis

63 Kiran Thind, Year 3, Imperial College London

Does bisphosphonate therapy alter microdamage morphology?

64 Caroline Hazel, Year 6, University of Birmingham

A next generation sequencing approach to identifying genetic causes of fertilisation failure, specific to men, in IVF or ICSI

65 Naomi Elliott, Year 5, Queens University Belfast

The Anatomical, Radiological and Clinical Significance of the Sella Turcica

Abstracts for Poster Presentations

Theme 8: Global Health and Education

66 Harriet Marsland, Year 4, University of Birmingham

A qualitative exploration of women's experiences of antenatal and intrapartum care: the need for a woman-centred approach in the Peruvian Amazon

67 Jasleen Singh, Year 5, London School of Hygiene and Tropical Medicine

Evaluating the performance of HIV Early Infant Diagnosis services in Zambia using routinely collected data from 2006 to 2016

68 Shilpa Sisodia, Year 5, Barts and The London

India's Missing Women: A Policy Analysis

69 Livia Samara, Year 5, University of Birmingham

Knowledge, confidence and practice of manual vacuum aspiration amongst post-abortion care providers in Blantyre, Malawi: A cross-sectional study

70 Emilie Baril, Year 6, Kings College London

Benefits and limitations of trauma registry use in low- and middle-income countries: A systematic review of the literature on trauma registry implementation

71 James Goodworth, Year 4, Brighton and Sussex Medical School

Identifying Barriers to Patient-Centred Childbirth: A Qualitative Study Exploring the Views and Experiences of Doctors and Nurses Working in a Highly Specialised Obstetric Care Unit at a 4th Level Hospital in Bogotá, Colombia

Abstracts for Poster Presentations

Theme 9: Epidemiology and Public Health

72 Medha Agrawal, Year 5, University of Birmingham

The role of folic acid supplementation and fortification in foetal outcomes: a systematic review and meta-analysis

73 Emma Kirby, Year 4, Cardiff University

The influence of demographic and social factors on infant feeding practices amongst teenage mothers in England - an observational study

74 Eleanor Lidgate, Year 5, University of Birmingham

A Qualitative Insight into Informal Childcare and Childhood Obesity in the UK

75 Rachael Ward, Year 6, Newcastle University

Walking groups as an intervention to increase physical activity in socioeconomically deprived areas: a mixed methods approach

76 Sandiso Moyo, Peninsula Medical School

Addressing health inequalities through systems thinking: an evaluation of joint working between schools and Public Health Plymouth

77 Jonathan Chan, Year 3, University of Bristol

A comparison of emollient prescribing formularies for eczema, across Clinical Commissioning Groups and Local Health Boards in England and Wales

78 Rosie Bhogal, Year 5, Imperial College London

The Use of Social Media by NHS trusts: Exploring the Methodology, Implementation and Strategies of NHS Trusts to Engage with the Public

79 Phoebe Hazenberg, Year 4, University of Birmingham

Factors influencing use of the Air Quality Health Index in school children in Hong Kong: an exploratory mixed methods cross-sectional study

80 Adam Pailing, Year 4, University of Birmingham

Depression, Social Anxiety, Psychosocial Maturity, and Risk Perception: Associations with Risk-Taking Behaviour

81 Smriti Aojula, Year 6, Imperial College London

Digital health and patient safety – a new framework for an old problem

82 Oziegbe Eboreime, Year 4, University College London

Preschool - The Next Frontier For The Battle Against Emotional and Behavioural Problems?

Abstracts for Poster Presentations

Theme 10: Ethics, Attitudes and Qualitative Studies

83 Nisha Aggarwal, Year 4, Kings College London

Usage and user feedback for a smartphone app developed to reduce harmful drinking in adolescents: A mixed methods study

84 Yashaswini Choudhary, Year 4, University of Birmingham

Exploring the views of junior doctors surrounding female medical leadership: a qualitative study

85 Kelvin Miu, Year 6, Barts and The London School of Medicine and Dentistry

Where do medical students learn how to cope with stress?

86 Joe Home, Year 6, Peninsula Medical School

The Ethical and Legal Obligations on Doctors in Handling Genomic Incidental Findings

87 Stephanie Wallis, Year 4, University of Birmingham

The phenomenology of 'non-psychotic' auditory verbal hallucinations

88 Oluwakanoyinsola Falayi, Year 4, Kings College University

A qualitative study exploring patient perceptions of nhs physiotherapy care for chronic lower back pain.

89 Daisy Flanagan, Year 5, University of Birmingham

Following a Moral Compass: Place and the Patient Experience of the Colonial Maltese 'Lunatic' Asylum, 1850-1900.'

90 Charlotte Cadge, Year 4, University of Birmingham

University students' understanding and perceptions of schizophrenia and the impact ethnicity has upon this: a qualitative study

Abstracts for Poster Presentations

Theme 11: Surgery, Anaesthetics and Trauma

91 Alex Christmas, Year 4, University of Dundee

The Significance of Injury Combinations in Children Referred for a Forensic Medical Examination

92 Imogen J John, Year 4, Imperial College London

Stakeholders' Views of Surgeon-Specific Mortality Data

93 Dónal McKeever, Year 3, Queens University Belfast

An Investigation into Concussion in Ulster Schoolboy Rugby Players

94 Sagar Kanabar, Year 5, Imperial College London

Metaboplasty: the influence of endovascular intervention on the metabolic profile of claudicants

95 Raeen Farrokhnik, Year 4, Imperial College London

The effect femoral stem length has on hip function; a prospective gait study at high speeds and inclines.

96 Emily Lake, Year 4, Queen Mary University London

Medical infrared thermal imaging in badminton and tennis players with tennis elbow: An observational case-control study

97 Mary Catherine Gribbon, Year 4, Queens University Belfast

Knee arthroscopy does not improve pain, disability and stiffness scores in patients with knee osteoarthritis: data from the Osteoarthritis Initiative

98 Salman Sadiq, Year 5, Keele University

The revolution of glaucoma surgery - the associated fibrosis risk of devices/procedures and mechanisms.

99 Ross Hunter, Year 4, The University of Aberdeen

A Comparison of the Open and Laparoscopic Techniques Used in Right Hemicolectomies for Colorectal Cancer

100 Maddalena Ardissino, Year 5, Imperial College London

Autonomic nervous system function during anaesthesia: an assessment of the clinical applications of a novel real-time monitoring tool

101 Carla Barberio, Year 4, University of Birmingham

The Effect of Shoulder Abduction and Medial Epicondylectomy (ME) on Ulnar Nerve Strain

102 Yat Wing Smart, Year 6, Peninsula Medical School

Intra-hospital transport of polytrauma patients

Network and WiFi

Staff and students from Eduroam Organisations

Visitors from an Eduroam organisation should find their devices automatically connect to Cardiff eduroam wifi.

Alternatively delegates can connect to the CU-Visitor WiFi

To connect your mobile device:

1. Select **'CU-VISITOR'** from your device's list of wireless network services. On some Apple devices, **'CU-VISITOR'** may not be listed. You can find the network by selecting **'Other'** and entering a search for **'CU-VISITOR'**.
2. On connecting, you will be required to state the purpose of your visit, please select **'I'm here for a Conference/School Open Day'**
3. You then need to register your contact details including mobile number and enter the Conference ID: **'MeetOct2017'**
4. Once registered, a text message will be sent to your mobile device containing your logon username and password.
5. Logon through the webpage using the username and password in the email or text message to connect.

If you do not have a mobile device, please contact Registration and a Cardiff University Guest Wi-Fi Coupon will be issued for you to use instead.

Travel Information

Conference Venue

Cardiff University
Main Building
Park Place
CF10 3AT

Rail: Cardiff Central Railway Station is approximately a 25 minute walk away from Main Building. There is a *Valleys Link* train from Cardiff Central which calls at Cathays Station departing from platforms 6 and 7. If using this link please alight at Cathays Station (approximately 6 minutes journey time from Cardiff Central). Cathays Station is located on Park Place and is approximately a 2 minute walk from Main Building. Alternatively there is a Taxi Rank at Cardiff Central, with taxi journeys costing around £6.

Bus/Coach: National Express operates services to Cardiff from cities throughout the UK, including a bus stop at Park Place outside of Main Building.
Megabus operates a low cost service to and from London, including a bus stop at Park Place outside of Main Building.

Road: Cardiff is served by the M4 and is easily accessible from all parts of Britain. From the south west, take the M5 and from the south of England, follow major A roads to the M4.From Scotland, the north of England and the Midlands, travel via the M50 to the M4.Travelling east on the M4. Leave the motorway at Junction 32, follow the A470, signposted City Centre, into the Cathays area of the city. Travelling west on the M4. Leave the motorway at Junction 29, follow the A48(M)/A48, signposted Cardiff East and South, to the A470. Follow the A470, signposted City Centre, into the Cathays area of the city.

Parking: There is limited car parking available at Cardiff University. Nearby there are off road Pay & Display car parks within a 5 minute walk of Main Building. Alternatively there are large multistory car parks (signposted) in the City Centre, between 10 – 20 minute walk from Main Building.

Taxis: Dragon 02920 333 333

Premier 02920 555 555

Information for Presenters

Oral presentations

Your talks will be 10 minutes long (each session will be strictly chaired). Talks should be prepared with Powerpoint and will be loaded onto the lecture theatre PCs. Please submit talks by Monday 23rd October so we can upload them and check that they work. The chair will invite questions from the audience after each talk so be prepared to be quizzed. We will also invite the audience to vote on each presentation/ question session as part of the prize assessments (scores will not be visible to the audience).

Poster presentations

Please prepare posters in portrait AO format with text large enough to read from a distance of 2m. Posters should not be so densely detailed that they are difficult to read – they are a graphical communication medium. You will be expected to be at your poster from 12.30pm when there will be a facilitated poster discussion. Please prepare a 1 minute brief synopsis of your project and expect to be questioned about the details. The prizes will be decided by the theme facilitators.

Acknowledgements

Meeting organisation

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Location Guide

Main Building – Location number 1