

# Outline Programme

## Wednesday 5 July

	NUFFIELD THEATRE	GARDEN COURT	LECTURE THEATRE H	
08.30				<b>Stem cells: basic science and therapeutic potential</b> <i>Stephen Minger (London, UK):</i> EMBRYONIC STEM CELLS <i>Christopher Evans (Boston, USA):</i> GENE THERAPIES IN MUSCULOSKELETAL DISEASE
09.00				
09.30		Registration/ poster hanging/ coffee		<b>Genetics and epigenetics</b> <i>John Loughlin (Oxford, UK):</i> GENETICS OF OSTEOARTHRITIS <i>John Newell-Price (Sheffield, UK):</i> DNA METHYLATION AND THE SILENCING OF GENE EXPRESSION
10.00				<b>Bioengineering</b> <i>John Fisher (Leeds, UK):</i> WEAR OF TOTAL JOINT REPLACEMENTS
10.30	<b>SYMPOSIUM: Stem cells: basic science and therapeutic potential</b>			<b>Bone and Joint Decade</b> <i>Michael Adams (Bristol, UK):</i> WHAT IS INTERVERTEBRAL DISC DEGENERATION, AND HOW DOES IT AFFECT VERTEBRAE?
11.00				<b>Matrix proteins in bone formation</b> <i>Lynda Bonewald (Kansas City, USA):</i> OSTEOCYTE MODIFICATION OF EXTRACELLULAR MATRIX <i>Marian Young (Bethesda, USA):</i> SMALL LEUCINE RICH PROTEOGLYCANS IN THE SKELETON
11.30	<b>ORAL COMMUNICATIONS</b>			
12.00				
12.30				
13.00	<b>BORS AGM and Awards</b>	<b>LUNCH and poster viewing</b>		
13.30				
14.00	<b>SYMPOSIUM: Bioengineering</b>		<b>SYMPOSIUM: Genetics and epigenetics</b>	
14.30	<b>ORAL COMMUNICATIONS</b>			
15.00		<b>TEA</b>		<b>LECTURE THEATRE A</b>
15.30	<b>SYMPOSIUM: Bone and Joint Decade</b>		<b>SYMPOSIUM: Matrix proteins in bone formation</b>	<b>CLINICAL CASES</b>
16.00				
16.30	<b>ORAL COMMUNICATIONS</b>		<b>ORAL COMMUNICATIONS</b>	
17.00				
17.30				
18.00				
18.30		<b>JOINT POSTER SESSION with wine and cheese</b>		
19.00				
19.30				
20.00				
20.15		<b>CONFERENCE DINNER</b>		

# Outline Programme

## Thursday 6 July

	NUFFIELD THEATRE	GARDEN COURT	LECTURE THEATRE H
08.30			
09.00	<b>SYMPOSIUM: Fetal origins of skeletal development</b>		<b>SYMPOSIUM: Nanotechnology and imaging</b>
09.30			
10.00	<b>ORAL COMMUNICATIONS</b>		<b>ORAL COMMUNICATIONS</b>
10.30			
11.00		<b>COFFEE and poster viewing</b>	
11.30	<b>ORAL POSTERS</b>		
12.00			
12.30			
13.00	<b>BRS AGM AND AWARDS</b>	<b>LUNCH and poster viewing</b>	
13.30			
14.00	<b>SYMPOSIUM: Clinical Disorders - Paediatric/Metabolic bone disease</b>		
14.30			
15.00			
15.30		<b>TEA</b>	<b>LECTURE THEATRE J</b>
16.00	<b>CLINICAL WORKSHOP</b>		<b>SYMPOSIUM: Musculoskeletal regeneration</b>
16.30			<b>ORAL COMMUNICATIONS</b>
17.00			
17.30			
18.00			
18.30			
19.00			
19.30			
20.00			
20.15			

### Fetal origins of skeletal development

*Cyrus Cooper (Southampton, UK):*  
DEVELOPMENTAL ORIGINS OF  
OSTEOPOROTIC FRACTURES

*Jon Tobias (Bristol, UK):*  
DETERMINANTS OF BONE  
GROWTH IN CHILDHOOD:  
INSIGHTS FROM THE ALSPAC  
COHORT

### Nanotechnology and imaging

*Laurent Bozec (London, UK):*  
SKELETAL TISSUES AT THE  
NANOSCALE

### Clinical Disorders - Paediatric/ Metabolic Bone Disease

*Nick Bishop (Sheffield, UK):*  
BONE FRAGILITY IN CHILDREN

*Ian Reid (Auckland, New Zealand):*

THE LINKS BETWEEN BODY  
COMPOSITION AND BONE

*David Marsh (London, UK):*  
FUTURE MANAGEMENT OF  
FRACTURE RISK

### Clinical Workshop

*Richard Keen (London, UK):*  
NICE GUIDELINES

*John Kanis (Sheffield, UK):*  
RISK ASSESSMENT

*Richard Eastell (Sheffield, UK):*  
OSTEOPOROSIS TREATMENT  
IN THE BIOLOGICS ERA

*Frazer Anderson (Southampton, UK):*  
VITAMIN D: WHO NEEDS  
SUPPLEMENTATION AND  
WITH WHAT?

### Musculoskeletal Regeneration

*Alicia El-Haj (Keele, UK):*  
THERAPEUTIC CELL THERAPY  
AND TISSUE ENGINEERING:  
NOVEL MAGNETIC STRATEGIES  
FOR GROWTH CONTROL AND  
DELIVERY

# Programme

## Wednesday 5 July

**09.00** GARDEN END OF GARDEN COURT

**Registration/poster hanging/coffee**

**09.50** NUFFIELD THEATRE

**Welcome and introduction**

*Philip Nelson, Deputy Vice-Chancellor, University of Southampton*

**10.00** NUFFIELD THEATRE

**SYMPOSIUM**

**Stem cells: basic science and therapeutic potential**

*Chairs:*

*Richard Oreffo (Southampton, UK)*

*David Marsh (Stanmore, UK)*

10.00 IS1 EMBRYONIC STEM CELLS

*Stephen Minger (London, UK)*

10.30 IS2 GENE THERAPIES IN MUSCULOSKELETAL DISEASE

*Chris Evans (Boston, USA)*

**11.00** NUFFIELD THEATRE

**Oral Communications**

*Chairs:*

*Bruce Caterson (Cardiff, UK)*

*Jonathan Reeve (Cambridge, UK)*

11.00 OC1 CLONAL PLASTICITY AND IN VIVO BONE FORMATION OF HUMAN FETAL FEMUR-DERIVED CELLS

*SH Mirmalek-Sani\*<sup>[1]</sup>, RS Tare<sup>[1]</sup>, HI Roach<sup>[1]</sup>, SM Morgan<sup>[1]</sup>, DI Wilson<sup>[2]</sup>, NA Hanley<sup>[2]</sup>, ROC Oreffo<sup>[1]</sup>*

<sup>[1]</sup>Bone and Joint Research Group, Developmental Origins of Health and Disease Division; <sup>[2]</sup>Human Genetics Division, University of Southampton, SO16 6YD, UK

11.10 OC2 SURVIVAL OF XENOGENEIC BONE MARROW-DERIVED MESENCHYMAL STEM CELLS IN A XENO-TRANSPLANTATION MODEL

*X Chen\*, G Li*

Musculoskeletal Research Unit, School of Biomedical Sciences, Musgrave Park Hospital, Queen's University Belfast, Belfast, BT9 7JB, UK

11.20 OC3 FUNCTIONAL CHOLINERGIC SIGNALLING MECHANISMS AND THE CENTRAL REGULATION OF HUMAN MESENCHYMAL STEM CELLS

*MJ Hoogduijn, GJ Spencer\*, PG Genever*  
Biomedical Tissue Research, University of York, York, UK

11.30 OC4 CAN MESENCHYMAL STEM CELLS PLAY A ROLE IN INCREASING NEW BONE FORMATION?

*M Korda, G Blunn, N Little, J Hua*  
UCL, London

11.40 OC5 EXCESSIVE LOCAL GLUCOCORTICOID GENERATION MAY EXPLAIN THE IDIOPATHIC OSTEOPOROSIS OF GLYCOGEN STORAGE DISEASE TYPE 1A

*A Ahmed\*, R Crook, EH Rabbitt, E Elias, PM Stewart, EA Walker, MS Cooper*  
University of Birmingham, Birmingham, UK

11.50 OC6 THE DETECTION OF HUMAN EMBRYONIC AND ADULT STEM CELL SURVIVAL IN IMMUNE DEFICIENT AND IMMUNE COMPETENT RAT MODELS OF BONE REPAIR

*SN Racey\*<sup>[1]</sup>, JL Tremoleda<sup>[1]</sup>, D Wojtacha<sup>[2]</sup>, N Khan<sup>[1]</sup>, J McWhir<sup>[2]</sup>, AHRW Simpson<sup>[1]</sup>, BS Noble<sup>[1]</sup>*

<sup>[1]</sup>Musculoskeletal Tissue Engineering Collaboration (MTEC), University of Edinburgh, Medical school, Edinburgh, UK; <sup>[2]</sup>Gene Function and Development, Roslin Institute. Roslin, UK

12.00 OC7 MILD PRIMARY HYPERPARATHYROIDISM IS ASSOCIATED WITH LOW BMD BUT NOT FRACTURE RISK, QUALITY OF LIFE OR MORTALITY IN COMMUNITY DWELLING ELDERLY WOMEN

*E McCloskey\*, D deTakats, M Beneton, J Cliffe, L Reaney, C McGurk, D Charlesworth, T Jalava, J Kanis*

University of Sheffield, Sheffield, UK

12.10 OC8 ATDC5: AN IDEAL CELL LINE FOR STUDYING CHONDROCYTE DIFFERENTIATION AND MODELLING CARTILAGE FORMATION

*RS Tare\*<sup>[1]</sup>, R Forsey<sup>[2]</sup>, JB Chaudhari<sup>[2]</sup>, ROC Oreffo<sup>[1]</sup>*

<sup>[1]</sup>Bone & Joint Research Group, University of Southampton, Southampton, SO16 6YD, UK; <sup>[2]</sup>Department of Chemical Engineering, University of Bath, Bath, BA2 7AY, UK

12.20 OC9 ZOLEDRONATE REDUCES EARLY ACUTE BONE LOSS AT THE HIP FOLLOWING SPINAL CORD INJURY

*JS Bubbear<sup>[1]</sup>, A Gall<sup>[1]</sup>, FRI Middleton<sup>[1]</sup>, M Ferguson-Pell<sup>[2]</sup>, RW Keen\*<sup>[1,3]</sup>*

<sup>[1]</sup>Royal National Orthopaedic Hospital, Stanmore, UK; <sup>[2]</sup>Aspire Centre for Disability Services, Stanmore, UK; <sup>[3]</sup>Institute of Orthopaedics & Musculoskeletal Science, University College Hospital, London, UK

**12.30** NUFFIELD THEATRE

**BORS AGM and awards**

**12.30** GARDEN END OF GARDEN COURT

**LUNCH and poster viewing**

**13.30** LECTURE THEATRE H

**SYMPOSIUM**

**Genetics and epigenetics**

*Chairs:*

*Nigel Arden (Southampton, UK)*

*Trudy Roach (Southampton UK)*

## Programme – Wednesday 5 July

- 13.30 IS3 GENETICS OF OSTEOARTHRITIS  
*John Loughlin (Oxford, UK)*
- 14.00 IS4 DNA METHYLATION AND THE SILENCING OF GENE EXPRESSION  
*John Newell-Price (Sheffield, UK)*

### 13.30 NUFFIELD THEATRE

#### SYMPOSIUM

#### Bioengineering

*Chairs:*

*Alicia El-Haj (Keele, UK)*

*Alan Goodship (Stanmore, UK)*

- 13.30 IS5 WEAR OF TOTAL JOINT REPLACEMENTS  
*John Fisher (Leeds, UK)*

#### Oral Communications

*Chairs:*

*Alicia El-Haj (Keele, UK)*

*Alan Goodship (Stanmore, UK)*

- 14.00 OC10 A FINITE ELEMENT STUDY OF A HIP RESURFACING ARTHROPLASTY WITH AND WITHOUT A STEM  
*JP Little\*, DW Murray, HS Gill*  
Oxford Orthopaedic Engineering Collaboration, University of Oxford, Oxford, UK

- 14.10 OC11 CHROMOSOMAL ABERRATIONS IN PATIENTS WHO HAVE HAD METAL-ON-METAL HIP BEARINGS IN-SITU FOR IN EXCESS OF 30 YEARS  
*E Dunstan<sup>[1]\*</sup>, D Ladon<sup>[2]</sup>, P Whittingham-Jones<sup>[1]</sup>, S Cannon<sup>[1]</sup>, P Case<sup>[2]</sup>, T Briggs<sup>[1]</sup>*  
<sup>[1]</sup>Royal National Orthopaedic Hospital, Stanmore; <sup>[2]</sup>Bristol Implants Research Center, Bristol

- 14.20 OC12 THE FRICTION BEHAVIOUR DURING THE WEAR OF METAL ON METAL HIP JOINTS WITH DIFFERENCE CLEARANCE  
*XQ Hu\*, A Taylor, M Tuke*  
Finsbury Orthopaedics Ltd, Leatherhead, Surrey, UK

### 14.30 GARDEN END OF GARDEN COURT

#### TEA

### 15.00 LECTURE THEATRE H

#### SYMPOSIUM

#### Matrix proteins in bone formation

*Chairs:*

*Miep Helfrich (Aberdeen, UK)*

*Nigel Loveridge (Cambridge, UK)*

- 15.00 IS6 OSTEOCYTE MODIFICATION OF EXTRACELLULAR MATRIX  
*Lynda Bonewald (Kansas City, USA)*

- 15.30 IS7 SMALL LEUCINE RICH PROTEOGLYCANS IN THE SKELETON  
*Marian Young (Bethesda, USA)*

### 15.00 LECTURE THEATRE A

#### Clinical Cases

*Chairs:*

*Richard Keen (London, UK)*

*Mike Adams (Bristol, UK)*

- 15.00 CC1 COMPARISON OF THE USE OF HUMERUS INTRAMEDULLARY NAIL AND DYNAMIC COMPRESSION PLATE FOR THE MANAGEMENT OF DIAPHYSEAL FRACTURES OF HUMERUS: A PROSPECTIVE RANDOMISED STUDY  
*M Changulani\*, UK Jain*  
Department of Trauma and Orthopedics, University Hospital, King George Medical College, Lucknow, Northern India

- 15.15 CC2 A BIOMECHANICAL STUDY COMPARING 6.5MM CANCELLOUS SCREWS AND 3.5MM CORTICAL SCREWS FOR DEPRESSED TIBIAL PLATEAU FRACTURES  
*S Patil<sup>[1]</sup>, A Mahon<sup>[1]</sup>, S Green<sup>[2]</sup>, I Mcmurtry<sup>[1]</sup>, A Port<sup>[1]</sup>*  
<sup>[1]</sup>James Cook University Hospital; <sup>[2]</sup>University of Durham

- 15.30 CC3 AUTOSOMAL DOMINANT CARPAL TARSAL OSTEOLYSIS: RESULTS OF TREATMENT WITH PAMIDRONATE  
*RD Gilbert\*, M Collins, J Fairhurst*  
Southampton General Hospital

- 15.45 CC4 OSTEOGENIC OSTEOMALACIA ASSOCIATED WITH AN ETHMOIDAL SINUS TUMOUR  
*ZA Cole\*, EM Dennison, NK Arden*  
MRC Epidemiology Resource Centre, Southampton General Hospital, Tremona Road, SO16 6YD, UK

### 15.00 NUFFIELD THEATRE

#### Symposium:

#### Bone and Joint Decade

*Chairs:*

*Hamish Simpson (Edinburgh, UK)*

*Carlos Wigderowitz (Dundee, UK)*

- 15.00 IS8 WHAT IS INTERVERTEBRAL DISC DEGENERATION, AND HOW DOES IT AFFECT VERTEBRAE?  
*Michael Adams (Bristol, UK)*

#### Oral Communications

*Chairs:*

*Hamish Simpson (Edinburgh, UK)*

*Carlos Wigderowitz (Dundee, UK)*

- 15.30 OC13 LONG-BONE REGENERATION USING GUIDING MEMBRANES: CRYOPRESERVED ARTERIAL ALLOGRAFTS VERSUS SYNTHETIC MEMBRANES  
*MA Suarez-Suarez\*<sup>[1,2]</sup>, M Alvarez-Rico<sup>[2]</sup>, F Ferrero-Manzanal<sup>[2]</sup>, P Menendez-Rodriguez<sup>[3]</sup>, A Meana-Infiesta<sup>[4]</sup>, J deCos-Juez<sup>[2]</sup>, JC deVicente-Rodriguez<sup>[2,3]</sup>, A Murcia-Mazon<sup>[1,2]</sup>*  
<sup>[1]</sup>Cabueñes-Gijon Hospital, Asturias, Spain; <sup>[2]</sup>Oviedo University, Asturias, Spain; <sup>[3]</sup>Hospital Central, Asturias, Spain; <sup>[4]</sup>Centro Comunitario de Sangre y Tejidos, Asturias, Spain

## Programme – Wednesday 5 July

- 15.40 OC14 ESTIMATE OF THE FUNCTIONAL IMPROVEMENT IN THUMB CMC JOINT OSTEOARTHRITIS AFTER A SINGLE INTRA-ARTICULAR STEROID INJECTION  
*M Khan\**, *D Derham*, *M Waseem*  
Department of Orthopaedics Macclesfield General Hospital, Victoria Road, Macclesfield, UK
- 15.50 OC15 DETECTION OF MATRIX METALLOPROTEINASES IN PRIMARY FROZEN SHOULDERS  
*IDM Brown\**<sup>[1]</sup>, *IG Kelly*<sup>[1]</sup>, *Prof IB McInnes*<sup>[2]</sup>  
<sup>[1]</sup>Glasgow Royal Infirmary, Glasgow, UK; <sup>[2]</sup>Centre for Rheumatic Diseases, University of Glasgow, UK
- 16.00 OC16 FUNCTIONAL IONOTROPIC GLUTAMATE RECEPTORS IN HUMAN FIBROBLAST-LIKE SYNOVIOCYTES MODULATE IL-6 AND MMP-2 EXPRESSION  
*SJ Flood*<sup>[1]</sup>, *R Parri*<sup>[2]</sup>, *A Williams*<sup>[3]</sup>, *VC Duance*<sup>[1]</sup>, *DJ Mason*<sup>[1]\*</sup>  
<sup>[1]</sup>Connective Tissue Biology Laboratories, School of Biosciences, Cardiff University, Museum Avenue, Cardiff CF10 3US, UK; <sup>[2]</sup>School of Life and Health Sciences Aston University Birmingham B4 7ET UK; <sup>[3]</sup>Department of Rheumatology, Cardiff University Heath Park, Cardiff CF14 4XN, UK
- 16.10 OC17 SEVERE MECHANICAL LOADING CAN CAUSE CERVICAL INTERVERTEBRAL DISCS TO PROLAPSE  
*P Pollintine\**, *D Skrzypiec*, *P Dolan*, *MA Adams*  
Department of Anatomy, University of Bristol, Bristol, UK
- 16.20 OC18 EVIDENCE FOR INVOLVEMENT OF A FACTOR X IN THE PROPAGATION OF THE OSTEOARTHRITIC PHENOTYPE  
*K Hashimoto\**<sup>[1,2]</sup>, *N Yamada*<sup>[2]</sup>, *S Kokubun*<sup>[2]</sup>, *HI Roach*<sup>[1]</sup>  
<sup>[1]</sup>Bone and Joint Research Group, University of Southampton, Southampton, UK; <sup>[2]</sup>Department of Orthopaedics, Tohoku University, Sendai, Japan
- 16.30 OC19 DEFICIENCY OF THE SPECIFIC IMMUNE SYSTEM ENHANCES FRACTURE REPAIR IN-VIVO  
*MS Gaston\**, *BS Noble*, *AHRW Simpson*  
Musculoskeletal Tissue Engineering Consortium, University of Edinburgh, Chancellor's Building, 49 Little France Crescent, Edinburgh, UK
- 16.40 OC20 PRIMARY FROZEN SHOULDER THAWED  
*M Bains\**<sup>[1]</sup>, *S Lambert*<sup>[2]</sup>, *V Mudera*<sup>[1]</sup>  
<sup>[1]</sup>UCL, London, UK; <sup>[2]</sup>Royal National Orthopaedic Hospital, Stanmore, UK
- 16.50 OC21 HOW DO BMD, FRACTURE SEVERITY AND CEMENT TYPE INFLUENCE THE BIOMECHANICAL EFFECTS OF VERTEBROPLASTY?  
*J Luo\**<sup>[1]</sup>, *D Skrzypiec*<sup>[1]</sup>, *P Pollintine*<sup>[1]</sup>, *MA Adams*<sup>[1]</sup>, *DJ Annesley-Williams*<sup>[2]</sup>, *P Dolan*<sup>[1]</sup>  
<sup>[1]</sup>Department of Anatomy, University of Bristol, Bristol, UK; <sup>[2]</sup>Queen's Medical Centre, Nottingham, UK

## 16.00 LECTURE THEATRE H

### Oral Communications

*Chairs:*

*Tim Arnett (London, UK)*

*Nick Harvey (Southampton, UK)*

- 16.00 OC22 OSTEOCYTES REPAIR FOLLOWING MICRODAMAGE INJURY IN VITRO  
*MY Loqman\**, *G Kogianni*, *AHRW Simpson*, *BS Noble*  
Edinburgh, UK
- 16.10 OC23 INSIGHT INTO THE FUNCTION OF BCL-2-ASSOCIATED ATHANOGENE-1 ANTI-APOPTOTIC PROTEIN DURING CHONDROCYTE DEVELOPMENT AND DIFFERENTIATION  
*RS Tare\**<sup>[1]</sup>, *PA Townsend*<sup>[2]</sup>, *G Packham*<sup>[3]</sup>, *ROC Oreffo*<sup>[1]</sup>  
<sup>[1]</sup>Bone & Joint Research Group; <sup>[2]</sup>Human Genetics; <sup>[3]</sup>Cancer Sciences, University of Southampton, Southampton SO16 6YD, UK
- 16.20 OC24 ACTIVATION OF HUMAN OSTEOCLASTS BY CAPSAICIN  
*A Brandao-Burch\**, *TR Arnett*  
Department of Anatomy and Developmental Biology, University College London, London, UK
- 16.30 OC25 AN OSTEOPROTEGERIN-LIKE PEPTIDOMIMETIC (OP3-4) INHIBITS OSTEOCLASTIC BONE RESORPTION AND OSTEOLYTIC BONE DISEASE IN MULTIPLE MYELOMA  
*DJ Heath\**<sup>[1]</sup>, *K Vanderkerken*<sup>[2]</sup>, *X Cheng*<sup>[3]</sup>, *O Gallagher*<sup>[1]</sup>, *M Prideaux*<sup>[1]</sup>, *R Murali*<sup>[2]</sup>, *PI Croucher*<sup>[1]</sup>  
<sup>[1]</sup>University of Sheffield, UK; <sup>[2]</sup>Free University Brussels, Belgium; <sup>[3]</sup>University of Pennsylvania, USA
- 16.40 OC26 IN VIVO STIMULATION OF BONE RESORPTION BY APOPTOTIC OSTEOCYTES  
*G Kogianni\**, *V Mann*, *BS Noble*  
Musculoskeletal Tissue Engineering Collaboration (MTEC), University of Edinburgh, Medical School, Edinburgh, UK
- 16.50 OC27 A NOVEL ROLE FOR IL-23 IN OSTEOCLAST DEVELOPMENT  
*L Chen\**, *DP Aeschlimann*, *XQ Wei*  
Department of Dental Health and Biological Sciences, Cardiff, UK
- 17.00 BREAK**
- 18.00-20.00 GARDEN END OF GARDEN COURT**
- Poster session with wine and cheese**
- 18.00 Odd numbered posters to be manned
- 19.00 Even numbered posters to be manned
- 20.15-24.00 GARDEN COURT**
- Conference dinner**

# Programme

## Thursday 6 July

<b>08.30</b>		<b>NUFFIELD THEATRE</b>
		<b>SYMPOSIUM</b>
		<b>Fetal origins of skeletal development</b>
		<i>Chairs:</i> <i>Richard Eastell (Sheffield, UK)</i> <i>Ian Reid (Auckland, New Zealand)</i>
08.30	IS9	DEVELOPMENTAL ORIGINS OF OSTEOPOROTIC FRACTURES <i>Cyrus Cooper (Southampton, UK)</i>
09.00	IS10	DETERMINANTS OF BONE GROWTH IN CHILDHOOD: INSIGHTS FROM THE ALSPAC COHORT <i>Jon Tobias (Bristol, UK)</i>
<b>09.30</b>		<b>NUFFIELD THEATRE</b>
		<b>Oral Communications</b>
		<i>Chairs:</i> <i>Bronwen Evans (Cardiff, UK)</i> <i>Lynda Bonewald (Kansas City, USA)</i>
09:30	OC37	MRNA EXPRESSION OF HUMAN PLACENTAL CALCIUM TRANSPORTER (PMCA3) PREDICTS INTRAUTERINE BONE MINERAL ACCRUAL IN THE OFFSPRING <i>NC Harvey<sup>[1]*</sup>, R Martin<sup>[2]</sup>, MK Javaid<sup>[1]</sup>, P Taylor<sup>[3]</sup>, JR Poole<sup>[1]</sup>, EM Dennison<sup>[1]</sup>, HM Inskip<sup>[1]</sup>, KM Godfrey<sup>[1,2]</sup>, C Cooper<sup>[1]</sup>, RM Lewis<sup>[2]</sup></i> <sup>[1]</sup> MRC Epidemiology Resource Centre, Southampton, UK; <sup>[2]</sup> Centre for the Developmental Origins of Health and Disease, University of Southampton, Southampton, UK; <sup>[3]</sup> Medical Physics and Bioengineering, Southampton General Hospital, Southampton, UK
09:40	OC38	GROWTH IN INFANCY AND CHILDHOOD PREDICTS HIP FRACTURE RISK IN LATE ADULTHOOD IN MEN AND WOMEN <i>MK Javaid<sup>[1]*</sup>, JG Eriksson<sup>[2]</sup>, M Välimäki<sup>[2]</sup>, E Kgjantie<sup>[2]</sup>, T Forsen<sup>[2]</sup>, C Osmond<sup>[1]</sup>, DJ Barker<sup>[1]</sup>, C Cooper<sup>[1]</sup></i> <sup>[1]</sup> MRC Epidemiology Resource Centre, Southampton, UK; <sup>[2]</sup> The National Public Health Institute, Helsinki, Finland
09:50	OC39	A RATIONALE FOR TREATING LEG LENGTH DISCREPANCY USING PHOTODYNAMIC THERAPY <i>SK Bisland<sup>[1]*</sup>, C Johnson<sup>[1]</sup>, M Diab<sup>[2]</sup>, BC Wilson<sup>[1]</sup>, S Burch<sup>[1,2]</sup></i> <sup>[1]</sup> Princess Margaret Hospital, Ontario Cancer Institute, University Health Network, Toronto, Ontario, M5G 2M9, Canada ; <sup>[2]</sup> University of California, San Francisco, Department of Orthopaedic Surgery, San Francisco, CA USA
10:00	OC40	REMODELLING CLUSTERS REDUCE LOCAL BONE STRAIN AND FAVOUR CANAL MERGING <i>D Thomas, J Clement, J Reeve, N Loveridge</i> School of Dental Science, University of Melbourne, Australia & University of Cambridge UK

10:10	OC41	ACTIVATION OF PEROXISOME PROLIFERATOR ACTIVATED RECEPTOR DELTA (PPARDELTA) INCREASES PERIOSTEAL BONE FORMATION <i>K Still<sup>[1]*</sup>, MJ Perry<sup>[2]</sup>, P Grabowski<sup>[1]</sup>, NJ Bishop<sup>[1]</sup></i> <sup>[1]</sup> Academic Unit of Bone Biology/Child Health, University of Sheffield; <sup>[2]</sup> Department of Anatomy, University of Bristol
10:20	OC42	NEW SCAFFOLDS FOR SKELETAL REGENERATION: STIMULATING ANGIOGENESIS AND OSTEOGENESIS <i>J Kanczler<sup>[1]*</sup>, J Barry<sup>[2]</sup>, P Ginty<sup>[2]</sup>, W Sebald<sup>[3]</sup>, S Howdle<sup>[2]</sup>, K Shakesheff<sup>[2]</sup>, ROC Oreffo<sup>[1]</sup></i> <sup>[1]</sup> University of Southampton, UK; <sup>[2]</sup> University of Nottingham, UK; <sup>[3]</sup> University of Wurzburg, Germany

<b>08.30</b>		<b>LECTURE THEATRE H</b>
		<b>SYMPOSIUM</b>
		<b>Nanotechnology and imaging</b>
		<i>Chairs:</i> <i>Gang Li (Belfast, UK)</i> <i>Andrew McCaskie (Newcastle)</i>
08.30	IS11	SKELETAL TISSUES AT THE NANOSCALE <i>Laurent Bozec (London, UK)</i>
		<b>Oral Communications</b>
		<i>Chairs:</i> <i>Andrew McCaskie (Newcastle)</i> <i>John Fisher (Leeds, UK)</i>
09:00	OC28	IMAGING OF THE MUSCULOSKELETAL SYSTEM USING 3D ULTRASOUND <i>E Ross<sup>[1]*</sup>, TJ MacGillivray<sup>[2]</sup>, H Simpson<sup>[1]</sup>, WN McDicken<sup>[3]</sup></i> <sup>[1]</sup> Edinburgh Orthopaedic Engineering Centre, University of Edinburgh, Edinburgh Royal Infirmary; <sup>[2]</sup> Wellcome Trust Clinical Research Facility, Western General Hospital, EH4 XU; <sup>[3]</sup> Medical Physics, University of Edinburgh, Edinburgh Royal Infirmary
09:10	OC29	A NEW UNDERSTANDING OF STRUCTURAL ADAPTATION OF TENDON TO MECHANICAL LOAD <i>AP Rumian<sup>[1]*</sup>, ERC Draper<sup>[1,2,3]</sup>, AL Wallace<sup>[1]</sup>, AE Goodship<sup>[2,3]</sup></i> <sup>[1]</sup> Imperial College, London, UK; <sup>[2]</sup> Veterinary Basic Sciences, Royal Veterinary College, Hatfield, UK; <sup>[3]</sup> Institute of Orthopaedics and Musculoskeletal Sciences, UCL, London, UK
09:20	OC30	A NEW METHOD TO MEASURE THE INTER-FRACTURE SITE MOVEMENTS (IFMS) DYNAMICALLY BY MEANS OF STEWART PLATFORM ALGORITHM <i>F Li<sup>[1]</sup>, JH Kuiper<sup>[2]</sup>, SA Khan<sup>[3]</sup>, C Hutchinson<sup>[1,3]</sup>, CE Evans<sup>[1]</sup></i> <sup>[1]</sup> University of Manchester; <sup>[2]</sup> The Robert Jones & Agnes Hunt Orthopaedic Hospital; <sup>[3]</sup> Hope Hospital, Manchester

## Programme – Thursday 6 July

- 09:30 OC31 EXPRESSION PROFILING OF MATRIX METALLOPROTEINASES IN DUPUYTREN'S DISEASE  
*P Johnston\*<sup>[1,2]</sup>, AJ Chojnowski<sup>[1]</sup>, RK Davidson<sup>[2]</sup>, GP Riley<sup>[3]</sup>, ST Donell<sup>[1]</sup>, IM Clark<sup>[2]</sup>*  
<sup>[1]</sup>Norfolk & Norwich University Hospital, Norwich; <sup>[2]</sup>School of Biological Sciences, University of East Anglia, Norwich; <sup>[3]</sup>Rheumatology Research Unit, Addenbrooke's Hospital, Cambridge
- 09:40 OC32 THE MOLECULAR AND CELLULAR RESPONSE OF HUMAN BONE TO MECHANICAL STIMULATION  
*V Mann\*<sup>[1]</sup>, G Kogianni<sup>[1]</sup>, C Huber<sup>[1]</sup>, A Voultziadou<sup>[1]</sup>, AHRW Simpson<sup>[1]</sup>, DB Jones<sup>[2]</sup>, BS Noble<sup>[1]</sup>*  
<sup>[1]</sup>Musculoskeletal Tissue Engineering Collaboration (MTEC), University of Edinburgh Medical School; <sup>[2]</sup>Dept. Experimental Orthopaedics and Biomechanics, Philipps University Marburg
- 09:50 OC33 SINGLE INJECTION OF THROMBIN-RELATED PEPTIDE (TP508) IN A SLOW-RELEASING PREPARATION ENHANCED BONE CONSOLIDATION DURING DISTRACTION OSTEOGENESIS  
*G Li\*<sup>[1]</sup>, C Wan<sup>[1]</sup>, H Wang<sup>[2]</sup>, DH Carney<sup>[2]</sup>, JT Ryaby<sup>[2]</sup>*  
<sup>[1]</sup>Musculoskeletal Education and Research Unit, Queen's University Belfast, Musgrave Park Hospital, Belfast, BT9 7JB, UK; <sup>[2]</sup>Research Department, OrthoLogic, 1275 West Washington Street, Tempe, USA
- 10:00 OC34 BIOMATERIAL SURFACE ARCHITECTURE DICTATES CELL:CELL INTERACTIONS AND REGULATES OSTEOBLAST DIFFERENTIATION  
*G Kirmizidis\*, MA Birch*  
University of Newcastle, Newcastle upon Tyne, UK
- 10:10 OC35 AN INNOVATIVE EX VIVO MODEL FOR CHONDROGENESIS AND OSTEOGENESIS  
*JC Pound\*, DW Green, HI Roach, ROC Oreffo.*  
Bone & Joint Research Group, Developmental Origins of Health and Disease, University of Southampton, Southampton, SO16 6YD, UK
- 10:20 OC36 AUGMENTATION OF ALLOGRAFT WITH HUMAN BONE MARROW STROMAL CELLS: VALIDATION OF CELL SURVIVAL, PROLIFERATION, OSTEOGENIC PHENOTYPE AND MECHANICAL STRENGTH  
*BJ Bolland\*, K Partridge, AMR New, DG Dunlop, ROC Oreffo*  
Southampton, UK

### 10.30 GARDEN END OF GARDEN COURT COFFEE and poster viewing

### 11.20 NUFFIELD THEATRE

#### Oral Posters

##### Chairs:

*Brendon Noble (Edinburgh, UK)  
Marian Young (Bethesda, USA)*

- 11:20 OP1 GENE, PROTEIN AND ELECTROPHYSIOLOGICAL EXPRESSION OF ION CHANNELS ON HUMAN TENOCYTES  
*M Magra\*<sup>[1,2]</sup>, S Hughes<sup>[1]</sup>, A ElHajj<sup>[1]</sup>, N Maffulli<sup>[1,2]</sup>*  
<sup>[1]</sup>Institute of Science and Technology, Keele University, Staffordshire, UK; <sup>[2]</sup>Department of Trauma and Orthopaedic Surgery, University Hospital of North Staffordshire, UK
- 11:25 OP2 BONE MARROW-DERIVED MESENCHYMAL STEM CELLS CAN FUSE WITH TUMOUR CELLS IN VITRO AND HOME TO TUMOURS IN VIVO  
*J Xiang\*, C Song+, G Li+, D Hirst\**  
School of Pharmacy and +Musculoskeletal Research Unit, School of Biomedical Sciences, Queen's University Belfast, Musgrave Park Hospital, Belfast, BT9 7JB, UK
- 11:30 OP3 THE SIGNIFICANCE OF WIRE TENSION IN FINE-WIRE FIXATORS: AN ANALYSIS OF THE EFFECT OF WIRE TENSION ON THE STRESS DISTRIBUTION AT THE WIRE-BONE INTERFACE  
*F Alvi\*<sup>[1]</sup>, L Yang<sup>[2]</sup>, T N Board<sup>[3]</sup>*  
<sup>[1]</sup>North West Deanery; <sup>[2]</sup>Division of Clinical Sciences (North), University of Sheffield; <sup>[3]</sup>University of Manchester
- 11:35 OP4 ADENOSINE MODULATES MESENCHYMAL STEM CELL DIFFERENTIATION INTO OSTEOBLASTS  
*BAJ Evans\*<sup>[1]</sup>, C Elford<sup>[1]</sup>, J Ham<sup>[2]</sup>*  
<sup>[1]</sup>Department of Child Health<sup>[2]</sup>Centre for Endocrine and Diabetes Sciences, School of Medicine, Cardiff University, Cardiff, UK
- 11:40 OP5 A NOVEL APPROACH TO CREATING A BIO MIMETIC HYDROXYAPATITE COATING ON FINE SURFACE FEATURES TO ENHANCE OSSEOINTEGRATION OF EXTERNAL FIXATION SCREWS  
*A Unnithan\*, R Wells, G Blunn, A Goodship*  
RNOH, Stanmore
- 11:45 OP6 MUTATIONS IN THE RANK SIGNAL PEPTIDE ALTER THE SUBCELLULAR LOCALISATION OF RANK AND PREVENT LIGAND-DEPENDENT ACTIVATION OF NF KAPPA BETA  
*JC Crockett\*<sup>[1]</sup>, A Duthie<sup>[1]</sup>, J Greenhorn<sup>[1]</sup>, DI Scott<sup>[1]</sup>, SH Ralston<sup>[2]</sup>, MH Helfrich<sup>[1]</sup>, MJ Rogers<sup>[1]</sup>*  
<sup>[1]</sup>University of Aberdeen, Aberdeen, UK; <sup>[2]</sup>University of Edinburgh, Edinburgh, UK
- 11:50 OP7 BIOMIMETIC APPROACHES TOWARDS THE DESIGN AND SYNTHESIS OF TISSUE ENGINEERING SCAFFOLDS  
*DW Green\*, J Pound, K Partridge, R Tare, D Walsh, S Mann, R Oreffo*  
Southampton, UK

## Programme – Thursday 6 July

11:55 OP8 FUNCTIONAL AND ULTRASTRUCTURAL STUDIES OF OSTEOCLASTS FROM OSTEOPETROTIC PATIENTS  
*F Coxon<sup>[1]</sup>, K Mackenzie<sup>[2]</sup>, J Greenhorn<sup>[1]</sup>, L Van Wesenbeeck<sup>[3]</sup>, A Frattinni<sup>[4]</sup>, A Pangrazio<sup>[4]</sup>, A Villa<sup>[4]</sup>, P Odgren<sup>[5]</sup>, M Helfrich\*<sup>[1]</sup>*

<sup>[1]</sup>Department of Medicine and Therapeutics, Institute of Medical Sciences, University of Aberdeen; <sup>[2]</sup>Histology- EM core facility, Institute of Medical Sciences, University of Aberdeen, Aberdeen, UK; <sup>[3]</sup>Department of Medical Genetics, University and University Hospital Antwerp, Antwerp, Belgium; <sup>[4]</sup>Instituto di Tecnologie Biomediche Avanzate, Consiglio Nazionale delle Ricerche, Segrate, Milano, Italy; <sup>[5]</sup>Department of Cell Biology, University of Massachusetts Medical School, Worcester MA01655, United States

12:00 OP9 CHANGES IN THE CHARACTERISTICS OF ARTICULAR CHONDROCYTES DURING OSTEOARTHRITIS

*A Aziz\*, HI Roach*

Bone & Joint Research Group, University of Southampton, Southampton UK

12:05 OP10 OSTEOBLASTS RESPOND TO MILD HEAT STRESS BY A CHANGE IN OSTEOPROTEGERIN (OPG) AND RECEPTOR ACTIVATOR OF NUCLEAR FACTOR-KAPPA B LIGAND (RANKL) RATIO

*S Meghji\*<sup>[1]</sup>, ST Ong<sup>[1,2]</sup>, A Maddi<sup>[1,3]</sup>, G Vinayahan<sup>[1]</sup>*

<sup>[1]</sup>UCL Eastman Dental Institute, London, UK; <sup>[2]</sup>Faculty of Dentistry, University of Malaya, Kuala Lumpur, Malaysia; <sup>[3]</sup>Faculty of Dentistry, National University of Singapore, Singapore

12:10 OP11 EXPERIMENTALLY VALIDATED FINITE ELEMENT MODEL OF A HUMAN TIBIA WITH A UNICOMPARTMENTAL KNEE REPLACEMENT

*HA Gray\*<sup>[1]</sup>, AB Zavatsky<sup>[1]</sup>, L Cristofolini<sup>[2,3]</sup>, HS Gill<sup>[4]</sup>*

<sup>[1]</sup>Dept of Engineering Science and <sup>[4]</sup>Dept of Orthopaedic Surgery (OOEC), University of Oxford, UK; <sup>[2]</sup>Medical Technology Lab, Rizzoli Orthopaedic Institutes, Bologna, Italy; <sup>[3]</sup>Engineering Faculty, University of Bologna, Italy

12:15 OP12 LEFT-HANDEDNESS IN WOMEN IS ASSOCIATED WITH A LOWER RISK OF FRACTURE BEFORE THE AGE OF 40

*J Finigan\*<sup>[1]</sup>, JA Clowes<sup>[2]</sup>, NFA Peel<sup>[1]</sup>, R Eastell<sup>[1]</sup>*

<sup>[1]</sup>University of Sheffield, Sheffield, UK; <sup>[2]</sup>Mayo Clinic School of Medicine, Rochester, MN, USA

12.30 NUFFIELD THEATRE

**BRS AGM and awards**

12.30 GARDEN END OF GARDEN COURT

**LUNCH and poster viewing**

13.30 NUFFIELD THEATRE

**SYMPOSIUM**

**Clinical Disorders - Paediatric/ Metabolic Bone Disease**

*Chairs:*

*Jonathan Tobias (Bristol, UK)*

*Brigitte Scammell (Nottingham, UK)*

13.30 IS12 BONE FRAGILITY IN CHILDREN  
*Nick Bishop (Sheffield, UK)*

14.00 IS13 THE LINKS BETWEEN BODY COMPOSITION AND BONE  
*Ian Reid (Auckland, New Zealand)*

14.30 IS14 FUTURE MANAGEMENT OF FRACTURE RISK  
*David Marsh (London, UK)*

15.00 GARDEN END OF GARDEN COURT

**TEA**

15.30 NUFFIELD THEATRE

**Clinical Workshop**

*Chairs:*

*Mark Cooper (Birmingham, UK)*

*Chris Edwards (Southampton, UK)*

15.30 IS15 NICE GUIDELINES  
*Richard Keen (London, UK)*

15.50 IS16 RISK ASSESSMENT  
*John Kanis (Sheffield, UK)*

16.10 IS17 OSTEOPOROSIS TREATMENT IN THE BIOLOGICS ERA  
*Richard Eastell (Sheffield, UK)*

16.30 IS18 VITAMIN D: WHO NEEDS SUPPLEMENTATION AND WITH WHAT?  
*Frazer Anderson (Southampton, UK)*

15.30 LECTURE THEATRE J

**SYMPOSIUM**

**Musculoskeletal Regeneration**

*Chairs:*

*Chris Evans (Boston, USA)*

*Tony Miles (Bath, UK)*

15.30 IS19 THERAPEUTIC CELL THERAPY AND TISSUE ENGINEERING: NOVEL MAGNETIC STRATEGIES FOR GROWTH CONTROL AND DELIVERY  
*Alicia El-Haj (Keele, UK)*

**Oral Communications**

*Chairs:*

*Chris Evans (Boston, USA)*

*Tony Miles (Bath, UK)*

16:00 OC43 ENHANCED CHONDROGENESIS OF INFRAPATELLAR FAT PAD STEM CELLS IN HYPOXIC CONDITIONS  
*W Khan\*, A Adesida, JG Andrew, TE Hardingham*  
 United Kingdom Centre for Tissue Engineering, University of Manchester

## Programme – Thursday 6 July

- 16:10 OC44 DYNAMIC RELEASE OF GROWTH FACTORS FROM FRESH FROZEN CANCELLOUS BONE ALLOGRAFT  
*TN Board\*<sup>[1,2]</sup>, P Rooney<sup>[2]</sup>, PR Kay<sup>[1]</sup>*  
<sup>[1]</sup>Wrightington Hospital, Wigan, UK; <sup>[2]</sup>Tissue Services R&D, National Blood Service, Liverpool, UK
- 16:20 OC45 THE EFFECT OF LOCAL ADMINISTRATION OF PHENYTOIN ON FRACTURE HEALING: AN EXPERIMENTAL STUDY  
*M Mathew\*, R Sen, R Nada*  
Postgraduate Institute of Medical Education and Research, Chandigarh, India
- 16:30 OC46 SFA(PATH); A MODIFICATION OF THE SFA GRADING SYSTEM OF CHONDROPATHY IN OSTEOARTHRITIS FOR USE WITH PATHOLOGICAL SAMPLES  
*A Yousef\*<sup>[1]</sup>, R Hill<sup>[1]</sup>, D Wilson<sup>[1]</sup>, DA Walsh<sup>[1,2]</sup>*  
<sup>[1]</sup>Sherwood Forest Hospitals NHS Trust, Mansfield Road, Sutton-in-Ashfield, NG17 4JL, UK; <sup>[2]</sup>Academic Rheumatology, University of Nottingham Clinical Science Building, City Hospital, Hucknall Road, Nottingham, NG5 1PB, UK
- 16:40 OC47 THE SAGITTAL PLANE KINEMATICS OF A NEW UNICOMPARTMENTAL KNEE REPLACEMENT: A CADAVERIC STUDY OF THE 'DOMED' OXFORD LATERAL UNICOMPARTMENTAL KNEE REPLACEMENT  
*JA Gallagher\*<sup>[1]</sup>, C Lee<sup>[2]</sup>, M Schablowski<sup>[2]</sup>, P Aldinger<sup>[2]</sup>, H Gill<sup>[1]</sup>, DW Murray<sup>[1]</sup>*  
<sup>[1]</sup>Nuffield Orthopaedic Centre, University of Oxford, UK; <sup>[2]</sup>Heidelberg Orthopaedic Clinic, University of Heidelberg, Germany
- 16:50 OC48 NINE YEARS FOLLOW UP AFTER THE FIRST AUTOLOGOUS HUMAN DISC REGENERATIONS AND REPLANTATIONS  
*BE Gerber\*<sup>[1]</sup>, M Biedermann<sup>[2]</sup>*  
<sup>[1]</sup>University Hospital Lewisham, London, UK; <sup>[2]</sup>Hopital de La Chaux-de-Fonds, Switzerland