

- P001 Optimising the investigation and management of vitamin D deficiency at North Bristol NHS Trust**
James Kennedy¹, Andrea Joughin¹, Rosje Marchant², Karen Harding², ¹*Gloucestershire Hospitals NHS Trust, Gloucestershire, UK,* ²*North Bristol NHS Trust, Bristol, UK*
- P002 Predicting acute post-operative outcomes following hip fractures**
Eilis Fitzgerald¹, Jude Ryan², Dermot O Farrell², ¹*GEMS, University of Limerick, Limerick, Ireland,* ²*University Hospitals Limerick, Limerick, Ireland*
- P003** Abstract withdrawn
- P004** Abstract withdrawn
- P005 Generation of conditional knock out mouse for Alkaptonuria**
Ke Liu¹, Antonius Plagge¹, Ranganath Lakshminarayan¹, James Gallagher¹, George Bou-Gharios¹, ¹*University of Liverpool, Liverpool, UK*
- P006 Aggrecan gene expression in chondrocytes is controlled by multiple regulatory elements**
Ian M Li¹, Ke Liu¹, Alice Neal², Peter D Clegg¹, Sarah De Val², George Bou-Gharios¹, ¹*University of Liverpool, Liverpool, UK,* ²*University of Oxford, Oxford, UK*
- P007 Reduction of frontal plane knee moment caused by lateral trunk lean depends on step width**
Jennifer Anderson^{1,2}, Stephanie King³, Andrzej Przybyla⁴, Lakshminarayan Ranganath⁵, Gabor Barton⁴, ¹*University of Salford, Salford, UK,* ²*Toffeln, Bristol, UK,* ³*University of Hull, Hull, UK,* ⁴*Liverpool John Moores University, Liverpool, UK,* ⁵*National Alkaptonuria Centre, Liverpool, UK*
- P008 Is a lack of structural integration at the intervertebral disc-vertebra interface a factor in human lumbar spine degeneration?**
Sharon Owen¹, Samantha Rodrigues², Christopher Sharp³, Kelly Wade², Neil Broom², Iain McCall¹, Sally Roberts¹, ¹*RJAH Orthopaedic Hospital Foundation Trust & ISTM (Keele University), Oswestry, Shropshire, UK,* ²*University of Auckland, Auckland, New Zealand,* ³*University Centre Shrewsbury, University of Chester, Shrewsbury, Shropshire, UK*
- P009** Abstract withdrawn
- P010 Small organic molecules in octacalcium phosphate**
Yang Li¹, David Reid¹, Rui Li¹, Christian Bonhomme², Danielle Laurencin³, Karin Muller¹, Melinda Duer¹, ¹*University of Cambridge, Cambridge, UK,* ²*UPMC, Paris, France,* ³*CNRS Montpellier, Montpellier, France*
- P011 Location, Location, Location: conserved differences in regional canine osteoblast behaviour**
Ines Pedro Perpétuo¹, Kevin Parsons², Mittal Shah¹, Isabel Orriss¹, Michael Doube¹, Andrew Pitsillides¹, Richard Meeson³, ¹*Comparative Biomedical Sciences, Royal Veterinary College, London, UK,* ²*Langford Veterinary Services, Bristol, UK,* ³*Queen Mother Hospital for Animals, Royal Veterinary College, London, UK*
- P012 Primary osteoblast culture from *Canis lupus familiaris* (domestic dog)**
Ines Pedro Perpétuo¹, Richard Meeson², Andrew Pitsillides¹, Michael Doube¹, Isabel Orriss¹, ¹*Comparative Biomedical Sciences, Royal Veterinary College, London, UK,* ²*Queen Mother Hospital for Animals, London, UK*
- P013 Primary osteoblast culture from *Vulpes vulpes* (red fox)**
Ines Pedro Perpétuo¹, Alessandro Felder¹, Andrew Pitsillides¹, Michael Doube¹, Isabel Orriss¹, ¹*Comparative Biomedical Sciences, Royal Veterinary College, London, UK*
- P014** Abstract withdrawn
- P015 Micromechanical properties of articular cartilage and subchondral bone of the human**

knee joint

Abby Peters^{1,2}, Eithne Comerford^{2,3}, Karl Bates¹, Riaz Akhtar², ¹IACD, University of Liverpool, Liverpool, UK, ²School of Engineering, University of Liverpool, Liverpool, UK, ³School of Veterinary Science, University of Liverpool, Liverpool, UK

- P016 FGF-2 promotes osteocyte differentiation through increased E11 expression in vitro**
Ekele Ikpegbu¹, Dylan Clements¹, Lena Basta¹, David Buttle², Andrew Pitsillides³, Katherine Staines¹, Colin Farquhason¹, ¹Roslin Institute and R(D)SVS, The University of Edinburgh, Edinburgh, UK, ²Department of Infection and Immunity, The University of Sheffield, Sheffield, UK, ³Comparative Biomedical Sciences, Royal Veterinary College, London, UK
- P017 The response of fibroblast growth factor-23 (FGF-23) to teriparatide in postmenopausal osteoporosis.**
Fatma Gossiel¹, Eugene McCloskey¹, Kim Naylor¹, Jennifer Walsh¹, Nicola Peel¹, Rcihard Eastell¹, ¹University of Sheffield, Sheffield, UK
- P018 Musculoskeletal and performance characteristics of exceptionally active older people: comparison between life-long runners, those taking up competitive running at a later age and a recreationally active control group.**
Jessica Coulson¹, Mathew Piasecki¹, Alex Ireland¹, Kevin Deere², Kimberley Hannam², Jon Tobias², Jamie McPhee¹, ¹Manchester Metropolitan University, Manchester, UK, ²University of Bristol, Musculoskeletal Research Unit, Bristol, UK
- P019 Knees and Teeth Syndrome (KaTS) in cats - patella fractures in felines with persistent deciduous teeth**
Sorrel Langley-Hobbs¹, ¹University of Bristol, Bristol, UK
- P020 Weight is associated with hip shapes known to predispose to osteoarthritis: a cross-sectional study in peri-menopausal women**
Benjamin Faber¹, Denis Baird¹, Jenny Gregory², Rebecca Barr², Richard Aspden², Debbie Lawlor¹, Celia Gregson¹, Jonathan Tobias¹, ¹University of Bristol, Bristol, UK, ²University of Aberdeen, Aberdeen, UK
- P021** Abstract withdrawn
- P022 Development of assays to assess the clinical utility of tenascin-C**
James Ozanne¹, David Pritchard³, Gerry McLachlan¹, Kim Midwood², Colin Farquharson¹, ¹Roslin Institute & R(D)VS University of Edinburgh, Edinburgh, UK, ²The Kennedy Institute of Rheumatology University of Oxford, Oxford, UK, ³Axis-Shield Diagnostics Ltd., Dundee, UK
- P023 Inhibition of CTX-II release by cathepsin K inhibition in vivo but not in vitro suggests that anti-resorptive therapy protects cartilage.**
Erik Lindstrom³, Urszula Grabowska³, Nick Athanasou², Karen Fuller¹, Tim Chambers¹, ¹St George's, University of London, London, UK, ²Botnar Research Centre, Oxford, UK, ³Medivir AB, Stockholm, Sweden
- P024 What is in the Osteoarthritic bone marrow lesion?**
Nidhi Sofat¹, Maureen Arora², Alan Boyde², ¹St George's, University of London, London, UK, ²Dental Physical Sciences, Queen Mary University of London, London, UK
- P025 The Rare and Undiagnosed Diseases Study (RUDY) Platform – a novel approach to patient-driven research in rare musculoskeletal diseases.**
Lydia Forestier-Zhang¹, Laura Watts¹, Alison Turner¹, Cristina Ponte¹, Harriet Teare², David Gray¹, Nathanael Gray¹, Rory Popert¹, Joanna Hogg¹, Joseph Barrett¹, Raashid Luqmani¹, Paul Wordsworth¹, Jane Kaye², M Kassim Javaid¹, ¹Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences, University of Oxford, Oxford, UK, ²Centre for Health, Law and Emerging Technologies, University of Oxford, Oxford, UK
- P026 Differences in bone density and geometry in adolescent male athletes engaged in UK popular sports: The PRO-BONE study.**
Dimitris Vlachopoulos¹, Alan R. Barker¹, Craig A. Williams¹, Sigurbjörn A. Arngrímsson³, Karen M. Knapp⁵, Brad S. Metcalf¹, Ioannis G. Fatouros⁴, Luis A. Moreno², Luis Gracia-

Marco^{1,2}, ¹University of Exeter, Exeter, UK, ²University of Zaragoza, Zaragoza, Spain, ³University of Iceland, Reykjavik, Iceland, ⁴University of Thessaly, Trikala, Greece, ⁵University of Exeter Medical School, Exeter, UK

- P027 Effect of denosumab treatment in osteoporosis patients who had long term bisphosphonate therapy**
S Nikolova¹, F Hannan¹, A Daroszezwska¹, V Mishra¹, ¹ROYAL LIVERPOOL AND BROADGREEN UNIVERSITY HOSPITAL NHS TRUST, LIVERPOOL, UK
- P028 Effectiveness of measuring bone alkaline phosphatase in monitoring patients with chronic kidney disease with bone mineral disorders**
A TRIDIMAS¹, S NIKOLOVA¹, V MISHRA¹, ¹ROYAL LIVERPOOL AND BROADGREEN UNIVERSITY HOSPITAL NHS TRUST, LIVERPOOL, UK
- P029 An evaluation of pre and post-operative biochemical and haematological changes in patients with hip fracture**
Emma Tenison¹, Celia Gregson^{1,2}, ¹Royal United Hospital NHS Foundation Trust, Bath, UK, ²Musculoskeletal Research Unit, University of Bristol, Bristol, UK
- P030 Icaritin anabolic function on human osteoblast via up-regulation of CXCR4.**
Ryan Lim¹, Lei Li², Jun Li², Nicholas Chew², Eu-Leong Yong², ¹National University of Singapore, Singapore, Singapore, ²National University Hospital, Singapore, Singapore
- P031 Effects of sexual hormone deficiency and reposition associated to malnourishment (Cafeteria diet or protein restriction) on bone metabolism in adult female Wistar rats**
Victoria Padula de Quadros¹, Maria Cristina Cintra Gomes-Marcondes¹, ¹University of Campinas, Campinas, São Paulo, Brazil
- P032 Laser Microtomy for regular Histology and advanced Histochemistry in Bone Research**
Heiko Richter¹, Anja Osterberg², Brigitte Müller-Hilke², Fabian Will¹, Birgitta Stolze¹, ¹LLS ROWIAK LaserLabSolutions GmbH, Garbsener Landstr. 10, 30419 Hannover, Germany, ²Institute of Immunology, Schillingallee 70, 18055, Germany
- P033 Impact of fracture risk assessment tools on proportions of women without prior fracture identified at risk and treated - lessons from the SIGN guidance**
Eugene McCloskey^{1,4}, Nicholas Harvey², Helena Johansson¹, Juliet Compston³, John Kanis¹, ¹Centre for Metabolic Bone Diseases, University of Sheffield, Sheffield, UK, ²MRC Lifecourse Epidemiology Unit, University of Southampton, Southampton, UK, ³Department of Medicine, Cambridge Biomedical Campus, Cambridge, UK, ⁴Centre for Integrated research in Musculoskeletal Ageing, University of Sheffield, Sheffield, UK
- P034 The effects of parathyroid hormone peptides on the peripheral skeleton of postmenopausal women: A systematic review**
Louis Metcalf^{1,2}, Eugene McCloskey^{1,2}, ¹MRC-Arthritis UK Centre for Integrated research into Musculoskeletal Ageing (CIMA), Department of Human Metabolism, University of Sheffield, Sheffield, UK, ²Mellanby Centre for Bone Research, Department of Oncology and Metabolism, University of Sheffield, Sheffield, UK
- P035 The adiponectin receptor agonist AdipoRon, activates osteoblast differentiation markers and promotes autophagy in vitro**
Matilda Downs¹, Aneka Sowman¹, Seint Lwin¹, James Edwards¹, ¹University of Oxford, Oxford, UK
- P036 Ex vivo model of human cancer-bone microenvironment**
Srinivasa Rao¹, John Broomfield¹, Sion Glyn-Jones¹, James Edwards¹, ¹University of Oxford, Oxford, UK
- P037 Predicting hip fracture risk from sideways falls using computer modelling techniques**
David Collins^{1,2}, Richard Eastell², Lang Yang², Karl Bates¹, Robin Crompton¹, ¹University of Liverpool, Liverpool, UK, ²University of Sheffield, Sheffield, UK

P038 Abstract withdrawn

P039 Relating Biological signals to Biomechanics in High Tibial Osteotomy
DEBORAH MASON¹, GEMMA WHATLING¹, CHRISTOPHER WILSON², CLEO BONNET¹,
CAROLE ELFORD¹, KAREN BRAKSPEAR¹, PAUL BIGGS¹, CATHY HOLT¹, ¹*CARDIFF*
UNIVERSITY, CARDIFF, UK, ²*University of Wales Hospital Llandough, CARDIFF, UK*

P040 Clinically available scanning techniques are a potential detection tool for high density mineralised protrusions (HDMP) in human knees joints
Neil Thomas¹, Nathan Jeffery¹, Briony Dillon¹, Valerie Adams¹, Lakshminarayan Ranganath¹,
Rob van 't Hof¹, Alan Boyde², James Gallagher¹, ¹*University of Liverpool, Liverpool, UK*,
²*Queen Mary, University of London, London, UK*

P041 Pitfalls in assessment and management of osteoporosis in a secondary care centre
Brijesh Ayyaswamy¹, Anoop Anand¹, Seema Kalra¹, Pual Dunckow¹, ¹*Blackpool Victoria*
hospital, Blackpool, UK

P042 Investigating phosphatidylserine metabolism in Lenz-Majewski syndrome
Charalambos Demetriou¹, Emma Peskett¹, Alexander Kapustin², Dagan Jenkins¹, Frédéric M
Vaz³, Osamu Kuge⁴, Peter Clayton¹, Kevin Mills¹, Angela Barnicoat⁵, Maria Bitner-Glindzicz^{1,5},
Duangrudee Wattanasirichaigoon⁶, Krystyna Chrzanowska⁷, Martina Simandlová⁸, Lionel
Maldergem⁹, Professor Catherine Shanahan², Sérgio B Sousa¹⁰, Gudrun E Moore¹, Philip
Stanier¹, ¹*Genetics and Genomic Medicine, UCL Institute of Child Health, London, UK*,
²*Cardiovascular Division, James Black Centre, King's College London, London, UK*,
³*Laboratory of Genetic Metabolic Disorders, Academic Medical Center, Amsterdam, The*
Netherlands, ⁴*Department of Chemistry, Faculty of Sciences, Kyushu University, Fukuoka,*
Japan, ⁵*Clinical Genetics Department, Great Ormond Street Hospital, London, UK*,
⁶*Department of Pediatrics, Faculty of Medicine, Ramathibodi Hospital, Mahidol University,*
Bangkok, Thailand, ⁷*Department of Medical Genetics, Children's Memorial Health Institute,*
Warsaw, Poland, ⁸*Department of Biology and Medical Genetics, University Hospital Motol and*
Second Faculty of Medicine, Prague, Czech Republic, ⁹*Centre de Génétique Humaine,*
Université de Franche-Comté, Besançon, France, ¹⁰*Serviço de Genética Médica, Hospital*
Pediátrico de Coimbra, Coimbra, Portugal

P043 Increases in proximal femur bone strength estimated using finite element models from computed tomography scans following brief, high impact exercise in older men
Daniel Blackwell^{1,2}, Lang Yang², Katherine Brooke-Wavell¹, Muhammad Qasim², Sarah
Allison^{1,3}, Winston Rennie⁴, Greg Summers⁵, Richard Eastell², ¹*Loughborough University,*
Loughborough, UK, ²*Sheffield University, Sheffield, UK*, ³*University of Surrey, Surrey, UK*,
⁴*University Hospitals Leicester, Leicester, UK*, ⁵*Derby Teaching Hospitals, Derby, UK*

P044 Abstract withdrawn

P045 Ubiquitin-protein ligase UBR5 suppresses heterotopic tendon/ligament ossification
David Mellis¹, Natalie Dora¹, Elaine Kinsella¹, Pavel Sharma¹, Malgorzata Kubiak¹, Antonia
Sophocleous¹, Stuart Ralston¹, Donald Salter¹, Robert Hill¹, Mark Ditzel¹, ¹*University of*
Edinburgh, MRC IGMM, Edinburgh, UK, ²*MRC Human Genetics Unit, Edinburgh, UK*

P046 Involvement of the PKR Signalling Pathway in the Development of Post-traumatic Osteoarthritis in the Mouse
Sophie Gilbert¹, Emma Blain¹, Cleo Bonnet¹, Victor Duce¹, Deborah Mason¹, ¹*Cardiff*
University, Cardiff, UK

P047 Free vitamin D concentrations reflect racial and geographic differences in total 25OHD
Carrie M. Nielson^{1,2}, Kerry S. Jones³, Rene F. Chun⁴, Jon Jacobs⁵, Yin Wang¹, Martin
Hewison⁶, John Adams⁷, Christine M. Swanson^{1,8}, Christine G. Lee^{3,9}, Dirk
Vanderschueren^{10,11}, Steven Pauwels^{12,13}, Ann Prentice^{3,14}, Richard D. Smith⁵, Tujin Shi⁵,
Yuqian Gao⁵, Joseph M. Zmuda¹⁵, Jodi Lapidus², Jane A. Cauley¹⁵, Roger Bouillon¹¹, Inez
Schoenmakers³, Eric S. Orwoll^{1,8}, ¹*Bone & Mineral Unit, Oregon Health & Science University,*

Portland, USA, ²Public Health & Preventive Medicine, Oregon Health & Science University, Portland, USA, ³Medical Research Council Human Nutrition Research, Cambridge, UK, ⁴Department of Orthopedics, University of California, Los Angeles, USA, ⁵Pacific Northwest National Laboratory, Richland, Washington, USA, ⁶University of Birmingham, Birmingham, UK, ⁷University of California, Los Angeles, USA, ⁸School of Medicine, Oregon Health & Science University, Portland, USA, ⁹Portland Veterans Affairs Medical Center, Oregon, USA, ¹⁰Laboratory of Diagnostic Medicine, KU Leuven, Leuven, Belgium, ¹¹Laboratory of Clinical and Experimental Endocrinology, KU Leuven, Leuven, Belgium, ¹²Department of Cardiovascular Sciences, KU Leuven, Leuven, Belgium, ¹³Department of Laboratory Medicine, University Hospitals Leuven, Leuven, Belgium, ¹⁴Medical Research Council, Keneba, Keneba, Gambia, ¹⁵Department of Epidemiology, University of Pittsburgh, Pennsylvania, USA

P048 A study of the role of ghrelin and ionic mechanisms in adipogenic differentiation of bone

Marine Bastien¹, James Downing¹, Andrew Evans¹, Neil Henney¹, ¹Liverpool John Moores University, Liverpool, UK

P049 Abstract withdrawn

P050 Identification and characterisation of extracellular vesicles and uptake events in resorbing osteoclasts using TEM tomography

David Sünderhau¹, Emma McDermott¹, Debbie Wilkinson¹, Kevin Mackenzie¹, Miep Helfrich¹, ¹University of Aberdeen, Aberdeen, UK

P051 Circulating microRNA in metabolic bone diseases-Osteoporosis

Abdullah Mandourah^{1,4}, Rob Van't Hof¹, Roger Barraclough², Lakshminarayan Ranganath³, Dong Barraclough¹, ¹Department of Musculoskeletal Biology, Institute of Ageing and Chronic Disease, University of Liverpool, Daulby Street, Liverpool, UK, ²Institute of Integrative Biology, University of Liverpool, Crown Street, Liverpool, UK, ³Royal Liverpool Hospital, Prescot Street, Liverpool, UK, ⁴The Ministry of Defense Armed Forces Medical Services, Taif, Saudi Arabia

P052 Hormone and Hormone Responsive Stress-Related Molecules Involved In Osteoporosis in Post-Menopausal Women

Ayed Dera^{1,2}, Roger Barraclough³, Ranganath Lakshminarayan⁴, Dong Barraclough¹, ¹Department of Musculoskeletal Biology II (Medicine), Institute of Aging and Chronic Diseases, UCD Building, University of Liverpool, Liverpool, UK, ²King Khalid University, Abha, UK, ³Institutes of Integrative Biology, University of Liverpool, Crown Street, University of Liverpool, UK, ⁴Department of Clinical Biochemistry and Metabolic Medicine, Royal Liverpool University Hospital, Prescot street, Liverpool, UK

P053 Delivery of pro-angiogenic and osteogenic genes to human skeletal and endothelial populations to augment bone repair

RMH Rumney¹, S Lanham¹, L Thiagarajan², J Dixon², KM Shakesheff², ROC Oreffo¹, ¹University of Southampton, Southampton, UK, ²University of Nottingham, Nottingham, UK

P054 Spinal osteoarthropathy in alkaptonuria patients monitored by¹⁸F -NaF PET/CT

Leah Taylor¹, Mark Baker², Sobhan Vinjamuri², Lakshminarayan Ranganath², Nathan Jeffery¹, James Gallagher¹, ¹University of Liverpool, Liverpool, UK, ²Royal Liverpool University Hospital, Liverpool, UK

P055 The relationship between the Fine Structure Analysis magnetic resonance imaging (MRI) technique and trabecular number (Tb.N) measured by micro computed tomography (microCT) in cadaveric vertebrae

Kirk McGilvray¹, Samantha Telfer², James Rafferty², Amanda Cox², Lance Farr², Mario Mendoza³, Snehal Shetye¹, Christian Puttlitz¹, ¹Orthopaedic Bioengineering Research Laboratory, Departments of Mechanical Engineering and School of Biomedical Engineering, Colorado State University, Fort Collins, Colorado, USA, ²Acuitas Medical Ltd, Swansea, Wales, UK, ³UCSB Brain Imaging Center, Department of Psychological & Brain Sciences, University of California Santa Barbara, Santa Barbara, California, USA

P056 Differences in spine shape in adults entering old age: relationship with sex, body size

and BMD

Anastasia Pavlova¹, Stella Muthuri², Fiona Saunders¹, Judith Adams³, Diana Kuh², Richard Aspden¹, Rebecca Barr¹, Jennifer Gregory¹, ¹*School of Medicine, Medical Sciences & Nutrition, University of Aberdeen, Aberdeen, UK*, ²*MRC Unit for Lifelong Health and Ageing, University College London, London, UK*, ³*Central Manchester University Hospitals NHS Foundation Trust, Manchester, UK*

P057 Novel Silane Surface Modification Increases Expression of Osteocyte Markers in Primary Human Osteoblast-Like Cells under Standard Culture Conditions

Sandra Fawcett¹, Judith Curran¹, Nicholas Rhodes¹, Lakshminarayanan Ranganath¹, Jane Dillon¹, Peter Wilson¹, James Gallager¹, John Hunt¹, ¹*University of Liverpool, Liverpool, UK*

P058 Investigation into the biomechanical properties of cancellous bone preserved using Thiel's fixation method

Claire M. Tierney¹, Nathan Jeffery¹, ¹*Human Anatomy Resource Centre, University of Liverpool, Liverpool, UK*

P059 Old bones, new structures - detection of adipocyte templated excrescences in aged human bone

Adam Taylor¹, Chris Platt², Peter Wilson², Lakshminarayanan Ranganath², Jim Gallagher², Alan Boyde³, ¹*Lancaster Medical School, Lancaster University, Lancaster, UK*, ²*Bone and Joint Research Group Musculoskeletal Biology, University of Liverpool, Liverpool, UK*, ³*DPS, Queen Mary, University of London, London, UK*

P060 Analysis of osteocyte density in mice using μ CT

Rob van 't Hof¹, Alex Morgan¹, Haziq Mokhtar¹, Anna Daroszewska¹, ¹*University of Liverpool, Liverpool, UK*

P061 An audit of the recognition and management of low alkaline phosphatase levels in children

Alexander Moylan¹, MZ Mughal^{1,2}, Benjamin Jacobs¹, ¹*Royal National Orthopaedic Hospital, London, UK*, ²*Central Manchester NHS Foundation Trust, Manchester, UK*

P062 Fibula adaptation to regular exercise indicates new mechanoadaptive behaviours of bone

Gustavo Cointry¹, Laura Nocciolino¹, Alex Ireland², José Ferretti¹, Jörn Rittweger³, Ricardo Capozza⁰, ¹*National University of Rosario, Rosario, Argentina*, ²*Manchester Metropolitan University, Manchester, UK*, ³*German Aerospace, Cologne, Germany*

P063 MicroRNA miR-1231 inhibits expression of sclerostin in TE85 and SaoS-2

Mohd Azuraidi Osman^{1,2}, Kasia Goljanek-Whysall¹, Peter J Wilson¹, James A Gallagher¹, Nick P Rhodes¹, ¹*Institute of Ageing and Chronic Disease, Liverpool, UK*, ²*Faculty of Biotechnology and Biomolecular Sciences, UPM Serdang, Malaysia*

P064 An anatomical investigation of a cadaver displaying characteristics of both enchondromas and osteochondromas

Rebecca Chilvers¹, Nathan Jeffery¹, Jim Gallagher¹, Alistair Bond¹, ¹*University of Liverpool, Liverpool, UK*

P065 BL-1249 is a K⁺ channel opener and inhibits induction of the intermediate early gene c-fos in the SaOS-2 osteosarcoma-derived cell line

Alistair Bond¹, Anne Gallagher¹, Jane Dillon¹, Tomoko Kamishima¹, Jim Gallagher¹, John Quayle¹, ¹*University of Liverpool, Liverpool, UK*

P066 Early Detection of Osteogenic Changes in Normal Human Osteoblasts by Raman Spectroscopy

Stephanie Marfy-Smith¹, Roger Emery³, Andrew Pitsilledes⁴, Sumeet Mahajan², Claire E. Clarkin¹, ¹*Centre for Biological Sciences, University of Southampton, SO171BJ, Southampton, UK*, ²*Institute for Life Sciences and Department of Chemistry, University of Southampton, SO171BJ, Southampton, UK*, ³*Department of Surgery and Cancer, Faculty of Medicine, Imperial College, SW7 1AZ, London, UK*, ⁴*Department of Comparative Biomedical*

Sciences, Royal Veterinary College, NW1 0TU, London, UK

- P067 Identification of regional diversity in blood vessel structures within murine cortical bone**
Juan Nunez¹, Philipp Thurner², Philipp Schneider¹, Claire Clarkin¹, ¹University of Southampton, Southampton, UK, ²Vienna University of Technology, Vienna, Austria
- P068 Bone loading by programmed muscle activity in the rat**
Jonathan Jarvis¹, Paula Vickerton³, James Gallagher², Riaz Akhtar², Hazel Sutherland^{1,2}, Nathan Jeffery², Martin Schmoll⁴, Manfred Bijak⁴, Hermann Lanmueller⁴, ¹Liverpool John Moores University, Liverpool, Merseyside, UK, ²The University of Liverpool, Liverpool, Merseyside, UK, ³Keele University, Keele, UK, ⁴The Medical University of Vienna, Vienna, Austria
- P069 Developing a more representative model of physiological and pathophysiological osteochondral cyclic loading**
Nidal Khatib¹, Deborah Mason¹, Andrew Metcalfe², Emma Blaine¹, Cathy Holt¹, ¹Cardiff University, Cardiff, Glamorgan, UK, ²Warwick University, Warwick, UK
- P070 Tissue distribution of mRNA expression of enzymes involved in the tyrosine metabolic pathway in *Hgd*^{-/-} mice with the osteoarthopathy of alkaptonuria.**
P. Wilson¹, L Ghezzi², J Dillon¹, A Santucci², L Ranganath³, J Gallagher¹, ¹University of Liverpool, Liverpool, Merseyside, UK, ²Università degli Studi di Siena, Siena, Italy, ³Royal Liverpool University Hospital, Liverpool, Merseyside, UK
- P071 A Metabolomics approach to changes associated with loss of cartilage in Alkaptonuria and Osteoarthritis: A Preliminary Study.**
Gordon Ross¹, Anna Milan^{2,3}, Andrew Hughes^{2,3}, Andrew Davison^{2,3}, Sarah Curtis³, Brendan Norman³, Norman Roberts³, Hazel Sutherland⁴, Jonathan Jarvis⁴, James Gallagher³, Lakshminarayan Ranganath^{2,3}, ¹Agilent Technologies UK Ltd., Manchester, UK, ²Royal Liverpool University Hospital, Liverpool Clinical Laboratories, Liverpool, UK, ³University of Liverpool, Liverpool, UK, ⁴Liverpool John Moores University, Liverpool, UK
- P072 The effect of continuous and intermittent exercise on bone mineral density in postmenopausal women: a six-month randomised control trial**
Gallin Montgomery¹, Grant Abt¹, Catherine Dobson¹, Tina Smith², Michael Fagan¹, Mo Aye³, ¹University of Hull, Hull, UK, ²University of Wolverhampton, Wolverhampton, UK, ³Hull and East Yorkshire Hospitals NHS Trust, Hull, UK
- P073** Abstract withdrawn
- P074 Autosomal Dominant High Bone Mass Syndrome presenting before skeletal maturity**
Mrinalini Dey¹, Kenneth Poole², ¹School of Clinical Medicine, University of Cambridge, Addenbrooke's Hospital, Hills Road, Cambridge, CB2 0SP, UK, ²Bone Research Group, University of Cambridge, Addenbrooke's Hospital, Hills Road, Cambridge, CB2 0QQ, UK
- P075 Up the creek: truthful imaging in spinal osteoporosis?**
Alan Boyde¹, ¹QMUL, London, UK
- P076 Are the cracks starting to appear in bisphosphonate treatment for osteoporosis?**
Andi Jin¹, Justin Cobb¹, Ulrich Hansen¹, Rajarshi Bhattacharya¹, Richard Abel⁰, ¹Imperial College, London, UK
- P077 P2X7 Receptor status alters the osteoblast response to clinically relevant concentrations of metal ions following metal-on-metal hip replacement**
Fay Ismail¹, Karan Shah¹, Mark Wilkinson¹, Alison Gartland¹, ¹The Mellanby Centre for Bone Research, The University of Sheffield, Sheffield, UK
- P078 P2X7RA or P2X7RB expression confers a growth advantage to Te85 osteosarcoma cells *in vitro*.**
Luke Tattersall¹, Karan Shah¹, Fay Ismail¹, Michelle Lawson¹, Alison Gartland¹, ¹The

University of Sheffield, Sheffield, UK

- P079 Collagen becomes ordered prior to mineral deposition**
Jemma G. Kerns^{1,2}, Kevin Buckley^{4,3}, John Churchwell², Anthony W. Parker³, Pavel Matousek³, Allen E. Goodship², ¹Lancaster University, Lancaster, UK, ²University College London, London, UK, ³Central Laser Facility, Research Complex at Harwell, STFC Rutherford Appleton Laboratory, Oxford, UK, ⁴NUI Galway, Galway, Ireland
- P080 Osteoclast Function is Modulated by Circulating Metal Ions from Patients Following Hip Resurfacing.**
KM Shah¹, PN Sudsok¹, D Morrell¹, JM Wilkinson¹, A Gartland¹, ¹Department of Oncology and Metabolism, The Mellanby Centre for Bone Research, The University of Sheffield, Sheffield, UK
- P081 Is earlier walking onset associated with greater hip bone strength in older men and women?**
Alex Ireland¹, Stella Muthuri², Judith Adams^{3,4}, Diana Kuh², Rachel Cooper², ¹Manchester Metropolitan University, Manchester, UK, ²MRC Unit for Lifelong Health and Ageing at UCL, London, UK, ³Central Manchester University Hospitals NHS Foundation Trust, Manchester, UK, ⁴University of Manchester, Manchester, UK
- P082 The emerging role of P2X7 receptor in mediating subchondral bone changes during mechanically induced osteoarthritis.**
Magdalena Adamczyk^{1,2}, Daniel Aeschlimann¹, Bronwen Evans³, Alison Gartland², ¹Matrix Biology and Tissue Repair Research Unit, School of Dentistry, Arthritis Research UK Biomechanics and Bioengineering Centre, College of Biomedical and Life Sciences, Cardiff University, Cardiff, UK, ²The Mellanby Centre For Bone Research, Academic Unit of Bone Biology, Department of Oncology and Metabolism, The University of Sheffield, Sheffield, UK, ³Division of Cancer and Genetics, School of Medicine, Arthritis Research UK Biomechanics and Bioengineering Centre, College of Biomedical and Life Sciences, Cardiff University, Cardiff, UK
- P083 Syndecan-3 is important for maintaining bone mass**
Francesca de Sousa Brito¹, Addolorata Pisconti¹, Rob van 't Hof¹, Anna Daroszewska¹, ¹University of Liverpool, Liverpool, UK
- P084 Microstructural analysis of disuse-related osteoporosis in an animal model of spinal cord injury**
J.A. Williams¹, J.F.C. Windmill², J.S. Riddell³, K.E. Tanner⁴, S. Coupaud¹, ¹Department of Biomedical Engineering, University of Strathclyde, Glasgow, UK, ²Department of Electronic and Electrical Engineering, University of Strathclyde, Glasgow, UK, ³Institute of Neuroscience and Psychology, College of Medical, Veterinary and Life Sciences, University of Glasgow, Glasgow, UK, ⁴Biomedical Engineering Division, University of Glasgow, Glasgow, UK
- P085 The Fibrodysplasia Ossificans Progressiva (FOP) Connection Registry: patient reports of new bone growth**
Neal Mantick¹, Betsy Bogard¹, ¹The International FOP Association, Casselberry, FL, USA
- P086 Time trends in fracture incidence in the United Kingdom between 1990 and 2012: a CPRD Study**
Robert van der Velde^{1,2}, Caroline Wyers^{1,2}, Elizabeth Curtis³, Piet Geusens^{4,5}, Joop van den Bergh^{1,2}, Frank de Vries⁶, Cyrus Cooper^{3,7}, Tjeerd van Staa⁹, Nicholas Harvey^{3,8}, ¹Department of Internal Medicine, VieCuri Medical Centre, Venlo, The Netherlands, ²Department of Internal Medicine, NUTRIM School for Nutrition, Toxicology and Metabolism, Maastricht University Medical Centre, Maastricht, The Netherlands, ³MRC Lifecourse Epidemiology Unit, Southampton General Hospital, University of Southampton, Southampton, UK, ⁴Department of Internal Medicine, Subdivision Rheumatology, CAPHRI, Maastricht University Medical Centre (MUMC), Maastricht, The Netherlands, ⁵Biomedical Research Centre, Hasselt University, Agoralaan, Diepenbeek, The Netherlands, ⁶Department of Clinical Pharmacology and Toxicology, University Medical Centre, Maastricht, The Netherlands, ⁷NIHR Musculoskeletal Biomedical Research Unit, Institute of Musculoskeletal Sciences, University of Oxford, Oxford,

UK, ⁸NIHR Southampton Nutrition Biomedical Research Centre, University of Southampton, Southampton, UK, ⁹Health eResearch Centre, University of Manchester, Manchester, UK