



Doctoral Training Network in Technologies for Healthy Ageing

## Future Leaders in Regenerative Medicine: Joint Conference CDTs and UKSB

Virtual Meeting 24-25<sup>th</sup> June 2020

### DAY 1

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| 9:45          | <b>Arrival online and admittance to conference</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 10.00         | <b>Welcome:</b> Dr Karen Coopman (Director, EPSRC-MRC CDT in Regenerative Medicine, Loughborough University) and Paul Roach (President, UKSB)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 10.15 – 11.00 | <b>Keynote speaker: Prof Liam Grover, Birmingham University,</b><br>Director of the Healthcare Technologies Institute (HTI)<br>Title: Materials technologies to enhance tissue formation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 11:00-11:05   | <b>Move to sessions</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 11.05-12:20   | <p><b>Materials: Nanopatterning and properties</b></p> <p><b>Chaired by: Tasmin Nahar and Periklis Petropoulos</b></p> <p><b>Ryan Dimmock:</b><br/><i>SMART MATERIAL FABRICATION FOR LIMBAL STEM CELL STUDY</i></p> <p><b>Danilo Villanueva: (TBC)</b><br/><i>The effects of mechanically tailored 3D nanofibrous scaffolds for corneal regeneration</i></p> <p><b>Laurissa Havins:</b><br/><i>Bioengineering Dual Gradient Platforms for the Control of Cell Behaviour and Differentiation</i></p> <p><b>Nicola Negrini:</b><br/><i>3D GELATIN HYDROGELS FOR TOOTH DEVELOPMENTAL TISSUE ENGINEERING</i></p> <p><b>Poster flashes:</b><br/>Catherine Taylor (Nottingham)<br/>Lydia Marinou<br/>Jonathan Taylor</p> | <p><b>Clinical Applications 1</b></p> <p><b>Chaired by: Dominic Williams and Eduardo Ribes Martinez</b></p> <p><b>Angela Imere:</b><br/><i>Tissue engineering the tendon synovial sheath for prevention of post-operative adhesions</i></p> <p><b>Patrick Lawson-Statham:</b><br/>Development Of A Composite Decellularised Osteochondral Scaffold For The Treatment Of Articular Cartilage Lesions</p> <p><b>Lisa Duff</b><br/>Automated Diagnosis In Large Vessel Vasculitis Using FDG PET-CT</p> <p><b>Serkan Dikici:</b><br/><i>2-deoxy-D-ribose: A sweet alternative to VEGF to stimulate angiogenesis and wound healing</i></p> <p><b>Poster flashes:</b><br/>James Watson<br/>Matthew Kibble<br/>Simon Williams<br/>C Taylor (Sheffield)</p> |
|               | <b>BREAK and poster viewing online</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |



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| 2:30-3:30 | <b>Poster Discussions via Zoom – in themes</b> |
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## DAY 2

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| 9:30-10:45 | <p><b>Enabling Technologies</b></p> <p><b>Chaired by: Hannah Lamont and Dominic Mosses</b></p> <p><b>Paul Humphreys:</b><br/><i>Synthetic photoreceptor engineering for optogenetic control of TGFβ signalling to drive chondrogenesis</i></p> <p><b>James Hopwood:</b><br/><i>A Comparison Of Electromechanical Versus Pneumatic-Controlled Knee Simulators For The Wear Performance Of A Total Ankle Replacement</i></p> <p><b>Andie Robinson:</b><br/><i>Development of Nano-Bioelectronic Systems, using Bipolar Electrochemistry</i></p> <p><b>Prof Aline Miller:</b><br/><i>Engineered Peptide Hydrogels; application in tissue regeneration, 3D bioprinting and drug discovery</i></p> <p><b>Poster flashes:</b><br/>Richard McDowell<br/>Liam Johnson<br/>Melissa Cheung</p> | <p><b>Clinical Applications 2</b></p> <p><b>Chaired by: Robert Bagley and James Watson</b></p> <p><b>Valeria Filippou</b><br/><i>Novel Person-Specific Step Count Algorithm For Different Types Of Gaits</i></p> <p><b>Jessica Wiseman</b><br/><i>Neurosurgical grade biomaterial Duragen Plus™ is a promising pro-regenerative matrix for repair of traumatic spinal cord injury.</i></p> <p><b>Faye Bolan</b><br/><i>The regenerative potential of injectable peptide hydrogels for intracerebral haemorrhage therapy</i></p> <p><b>Simon C. Kellaway</b><br/><i>Engineered neural tissue from decellularised biomaterials for peripheral nerve repair</i></p> <p><b>Poster flashes:</b><br/>Naomi Northage<br/>Jacqueline Solis<br/>Davide Verdolino<br/>Tasmin Nahar</p> |
| 10:45-11   | <b>BREAK</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |



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| <p>11 –<br/>12:15</p> | <p><b>Cell and Gene Therapy</b></p> <p><b>Chaired by: Josephine Thomas and Laura Hubbard</b></p> <p><b>Angharad Evans:</b><br/><i>Optimising Culture of Viral Production Cell Lines for Improved Lentiviral Manufacture</i></p> <p><b>William Jones:</b><br/><i>Bone And Mesenchymal Stem Cell Changes In Ankle Osteoarthritis</i></p> <p><b>Miguel Ferreira:</b><br/><i>Novel Strategies to Promote Human Embryonic Stem Cell Chondrogenesis in 3D Microenvironments</i></p> <p><b>David H. Ramos:</b><br/><i>Introducing microfabricated electrospun membranes to mimic the stem cell microenvironment in the dermal-epidermal junction</i></p> <p><b>Poster flashes:</b><br/>Mark Naven</p> | <p><b>Bioengineered Models</b></p> <p><b>Chaired by: Ryan Dimmock and Elaine Ma</b></p> <p><b>Elisa Tarsitano:</b><br/><i>Assessing the elastic properties and cytocompatibility of porcine liver decellularized ECM gels for a 3D in-vitro model</i></p> <p><b>Cosimo Ligorio:</b><br/><i>Engineering the nucleus pulposus tissue by exploiting a growth factor-loaded peptide/graphene oxide hydrogel nanocomposite</i></p> <p><b>Marlene Polleres:</b><br/><i>Neurovascular 3D cell model to investigate the role of pericytes in dementia</i></p> <p><b>Poster flashes:</b><br/>Lauren Hope<br/>Kirsten Liggat<br/>Narina Bileckaja<br/>Caitlin Jackson<br/>Leona Ogene</p> |
| <p>12:15</p>          | <p><b>Closing remarks and Award of prizes by Karen Coopman and Paul Roach</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |