EARLY CAREER RESEARCHER SOCIAL – MOOCH, STUDENTS UNION

CONFERENCE DINNER – UNIVERSITY SENATE CHAMBER, TRENT BUILDING
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**Tuesday 11th June 2019:**  
**Development of New Models, Tools and Technologies**

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<td>08:00 – 10:00</td>
<td>TCES-UKSB 2019 Registration and Poster Set-up</td>
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| 10:00 – 10:15 | **Welcome and Introduction to TCES-UKSB 2019**  
*Dr Lisa White, University of Nottingham* |
| 10:15 – 11:15 | **SESSION 1: IMAGING IN TERN**  
*Chair: A/Prof Colin Scotchford, University of Nottingham*  
10:15 – 10:45 | **Keynote - Professor Chris Sammon**, Sheffield Hallam University  
‘Using infrared imaging and spectroscopy to support the development of regenerative therapies’ |
| 10:45 – 11:00 | Mr Dan Merryweather, Loughborough University  
*Influence of sample preparation methods on the organizational presentation of collagen fibrils in hydrogel electron microscopy* |
| 11:00 – 11:15 | Prof Elisa Budyn, ENS Paris-Saclay  
*Reforming the Haversian network in a bone-on-chip* |
| 11:15 – 12:15 | **SESSION 2: Turbo Talks I**  
1. Ms Lydia Beeken, University of Nottingham (Poster No. 144)  
*Development of a topical cell therapy for ocular surface disorders*  
2. Ms Charlotte Lee-Reeves, Imperial College London (Poster No. 264)  
*Improving stem cell therapies for traumatic brain injury using bioactive ECM scaffolds to attenuate inflammation*  
3. Mr David Hiram Ramos Rodriguez, University of Sheffield (Poster No. 136)  
*Development of topographically controlled electrospun scaffolds to deliver proangiogenic agents for wound healing*  
4. Ms Man Li, University of Liverpool (Poster No. 54)  
*Nitric oxide releasing electrospun nanofibers for antimicrobial bone tissue engineering*  
5. Ms Kathryn Thomas, University of Nottingham (Poster No. 240)  
*Phosphate based glass coatings for rapid Ga3+ release: the challenges of balancing cytocompatibility with antimicrobial effects*  
6. Mrs Shirin Hanaei, Nottingham Trent University (Poster No. 109)  
*Modelling and emulating 3D multi-tissue interactions by microfluidic chip technology*  
7. Ms Flavia Bonalumi, University of Brighton (Poster No. 104)  
*Development of a multi-layered cryogel bioreactor with optimised fluid dynamics for bioartificial liver application*  
8. Mrs Alison Wilson, University of York (Poster No. 73)  
*Clinical translation of regenerative medicines: a regulatory primer*  
9. Mr Paul Mardling, Sheffield Hallam University (Poster No. 194)  
*Auxetic and composite scaffolds show potential for use in tissue engineering*  
10. Ms Thunyaporn Srisubin, University of Manchester (Poster No. 80)  
*Phosphonate-modified graphene–laponite composites for bone repair* |
| 12:15 – 13:30 | Lunch and UKSB Annual General Meeting                                                            |
| 13:30 – 15:15 | **SESSION 3: NEXT GENERATION BIOMATERIALS DISCOVERY**  
*Chair: Prof Morgan Alexander, University of Nottingham*  
13:30 – 14:00 | **Keynote - Professor Jan de Boer**, Eindhoven University of Technology  
Life at the cell-material interface’ |
14:00 – 14:15 Dr Mahetab Amer, University of Nottingham
*Differentiation by design: Varying surface topographical features of polymeric microparticles influences mesenchymal stem cell fate*

14:15 – 14:30 Mr Chinnawich Phamornnak, University of Manchester
*Non-woven mats of electroactive composites of silk-PEDOT:PSS for peripheral nerve regeneration*

14:30 – 14:45 Dr Jenny Aveyard, University of Liverpool
*Nitric oxide releasing contact lens bandages*

14:45 – 15:00 Mr David Richards, University of Manchester
*Utilising a novel photoresponsive hydrogel with defined surface topography and photoswitchable stiffness to analyse the biophysical regulation of mesenchymal stem cells*

15:00 – 15:15 Dr Laura Ruiz, University of Nottingham
*Rapid screening of inks for 3D printing personalised drug delivery implants*

15:15 – 16:15 Coffee Break and Posters

16:15 – 18:00 **SESSION 4: INNOVATIVE BIOMATERIALS**
*Chair: Dr Jude Curran, University of Liverpool*

16:15 – 16:30 Platinum Exhibitor: **Jellagen**

16:30 – 17:00 **Keynote - Professor Sandra Van Vlierberghe**, University of Ghent
*‘Versatile hydrogel platform for 3D printing applications’*

17:00 – 17:15 Dr Maxine Chan, Imperial College London
*Fabrication and characterisation of endometrial extracellular matrix hydrogel for endometrial regeneration*

17:15 – 17:30 Mr George Fleming, University of Liverpool.
*Dual-action nitric oxide-releasing micropatterned antibacterial PDMS surfaces*

17:30 – 17:45 Dr Richard Balint, University of Manchester.
*Graphene-polymer composites for the engineering of cardiac tissue*

17:45 – 18:00 Prof Bikramjit Basu, Indian Institute of Science
*3D inkjet printing of biomaterials with strength reliability and cytocompatibility: Quantitative process strategy for Ti-6Al-4V*

18:00 – 20:00 **TCES-UKSB Welcome Reception**

20:00 onwards **TCES-UKSB Early Career Researchers Social, Mooch, Students Union**

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**Wednesday 12th June 2019:**

**Translational Research: Barriers and Breakthroughs**

08:00 – 09:00 Meet the Mentor 1

09:00 – 10:45 **SESSION 5: BIOMATERIALS AND TERM**
*Chair: Dr Araida Hidalgo-Bastida, Manchester Metropolitan University*

09:00 – 09:15 Platinum Exhibitor: **TA Electroforce**

09:15 – 09:45 **Keynote - Professor Stephen Badylak**, University of Pittsburgh
*‘Clinical Translation of an acellular therapy for Barrett’s Oesophagus’*
09:45 – 10:00  Dr Victoria Roberton, University College London
Local suppression of the T cell response to peripheral nerve allografts using drug-eluting PCL fibres

10:00 – 10:15  Mr James Reid, University of Edinburgh
Biofunctionalizing tailored electrospun scaffolds for influencing vascular cellular performance

10:15 – 10:30  Ms Azadeh Rezaei, University College London
Role of silicate and silicate-bioactive glasses in bone nodule formation

10:30 – 10:45  Ms Roxanna Ramnarine, University of Southampton
Self-assembling structured laponite hydrogels with spontaneous 3D micropatterning of bioactive factors for tissue regeneration

10:45 – 11:15  Coffee break

11:15 – 12:45  SESSION 6: ADVANCES IN TERM
Chair: Dr James Phillips, University College London

11:15 – 11:30  Platinum Exhibitor: Cell and Gene Therapy Catapult

11:30 – 12:00  Keynote - Professor Alicia El Haj, University of Birmingham
‘Translation of cell therapy control platforms to the clinic’

12:00 – 12:15  Dr Lucy Bosworth, University of Liverpool
Electrospun scaffolds containing decellularised tissue matrix support conjunctival epithelial and goblet cells

12:15 – 12:30  Dr Emily Britchford, University of Nottingham/NuVision Biotherapies
Validation and assessment of an antibiotic decontamination manufacturing protocol for vacuum-dried human amniotic membrane

12:30 – 12:45  Mr Jonathan May, University of Southampton
Study of the effects of microbubbles on bone formation using micro-CT

12:45 – 14:00  Lunch and TCES Annual General Meeting

14:00 – 15:30  SESSION 7: DEVELOPMENT OF TRANSLATIONAL & 3D MODELS
Chair: Dr Paul Roach, Loughborough University

14:00 – 14:15  Platinum Exhibitor: BioTek

14:15 – 14:45  Keynote - Professor Katja Schenke-Layland, University of Tübingen
‘Non-invasive high content analysis of 3D in vitro test systems’

14:45 – 15:00  Ms Bethany Ollington, University of Sheffield
Generation of an immuno-responsive tissue engineered oral mucosal equivalent containing primary human macrophages

15:00 – 15:15  Dr Laura Macri-Pellizzeri, University of Nottingham
Porous glass microspheres show biocompatibility, tissue ingrowth and osteogenic onset in vivo.

15:15 – 15:30  Mr Jeremy Mortimer, University of Edinburgh
Investigations of human tendon width for the anatomical design of an in vitro flexor digitorum profundus enthesis model

15:30 – 16:30  Coffee and Posters
16:30 – 18:00  **SESSION 8: ROBERT BROWN EARLY STAGE INVESTIGATOR AND UKSB PRIZES**  
*Chair: Dr Nick Evans, University of Southampton*

16:30 – 16:45  Dr Jennifer Ashworth, University of Nottingham  
*Peptide gels of fully-defined composition and mechanics for modelling cell-matrix interactions in breast cancer*

16:45 – 17:00  Dr Nazia Mehrban, University College London  
*In vivo response to injectable hydrogels: from decellularised ECM to de novo peptides*

17:00 – 17:30  **Alan Wilson Memorial Lecture – Professor David Wood**, University of Leeds  
*‘The Minimata convention: challenges and opportunities for aesthetic dental materials’*

17:30 – 18:00  **UKSB President’s Prize – Professor Kevin Shakesheff**, University of Nottingham  
*‘Minimally invasive delivery of temperature sensitive biomaterials’*

19:00 – 23:00  **TCES-UKSB Conference Gala Dinner**  
*Drinks reception in Council Room (A21); dinner in the Senate Chamber at 20:00, Trent Building.*

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**Thursday 13th June 2019:**  
Emerging Research and New Frontiers

08:00 – 09:00  Meet the Mentor 2

09:00 – 09:45  **SESSION 9: SENSING & CONTROLLING CELL BEHAVIOUR I**  
*Chair: Prof Sarah Cartmell, University of Manchester*

09:00 – 09:30  **Keynote - Dr Roisin Owens**, University of Cambridge  
*A 3D bioelectronics model of the human gut*

09:30 – 09:45  Dr Frankie Rawson, University of Nottingham  
*Stimulative 3D conducting architectures to modulate cellular phenotype*

09:45 – 10:45  **SESSION 10: TURBO TALKS II**  
1. Ms Jazz Stening, University of Nottingham (Poster No. 243)  
*Optimisation of microparticle formulations for cytokine delivery for macrophage modulation for potential application in spinal cord injury*

2. Ms Rina Maruta, Kyoto Institute of Technology (Poster No. 150)  
*3D culture of epidermis by use of recombinant silk materials containing FGF-7 protein microcrystals*

3. Ms Eleanor Porges, University of Southampton (Poster No. 148)  
*Stable encapsulation of rifampicin and doxycycline in polymersome nanoparticles for delivery to intracellular bacteria*

4. Mr George Bullock, University of Sheffield (Poster No. 159)  
*Bisphosphonate toxicity to the oral mucosa is inhibited in vitro by hydroxyapatite granules*

5. Ms Jamie Thompson, University of Nottingham (Poster No. 161)  
*Investigating glycosaminoglycans in development and disease using fully defined 3D cell culture environments and human pluripotent stem cells*

6. Mr Alexander Sturtivant, University of Edinburgh (Poster No. 182)  
*Use of antifreeze proteins to modify pores in directionally frozen alginate sponges for cartilage tissue engineering*

7. Ms Anastasia Polydorou, University of Southampton (Poster No. 122)  
*Acoustically-stimulated drug carriers for bone fracture repair*

8. Dr Valentina Barrera, NHS Blood and Transplant, Tissue and Eye Services R&D (Poster No. 236)  
*Decellularisation of human femoral nerves in a closed system: towards introducing a new*
nerve allograft in healthcare in the UK
9. Mr Jordan Roe, Loughborough University (Poster No. 197)
Magnetic hydrogels: tissue engineering constructs with switchable stiffness
10. Ms Michaela Petaroudi, University of Glasgow (Poster No. 149)
Bacterial engineering for the ex-vivo expansion of HSCs

10:45 – 11:45 Coffee and Posters

11:45 – 12:30 SESSION 11: SENSING & CONTROLLING CELL BEHAVIOUR II
Chair: Dr Adam Celiz, Imperial College London

11:45 – 12:00 Dr Nuria Oliva Jorge, Imperial College London
Bioinspired nanomaterials for cell-selective activation of growth factors

12:00 – 12:15 Mr Manohar Prasad Koduri, University of Liverpool
Cytotoxicity and functionality of nano oxy-ph sensors in HMSC environment

12:15 – 12:30 Mrs Eva Barcelona, University of Glasgow
Engineering ligand mobility in the adhesive crosstalk to control stem cell differentiation

12:30 – 13:30 Lunch and Meet the Mentor 3

13:30 – 14:45 SESSION 12: BIOMATERIALS CHEMISTRY AND CHARACTERISATION I
Chair: Dr Cheryl Miller, University of Sheffield

13:30 – 14:00 Keynote - Professor Elizabeth Cosgriff-Hernandez, University of Texas
‘Integrin-targeting materials in regenerative medicine’

14:00 – 14:15 Dr Caroline Taylor, University of Sheffield
The potential of pressurised gyration to fabricate polyhydroxyalkanoate aligned fibre scaffolds for peripheral nerve repair

14:15 – 14:30 Mr Morgan Lowther, University of Birmingham
Formulation of an antimicrobial silver-doped magnesium oxychloride cement

14:30 – 14:45 Dr Rachel McCormick, University of Liverpool
Designing a novel bioengineered substrate as a treatment for AMD

14:45 – 15:15 Coffee break

15:15 – 16:00 SESSION 13: BIOMATERIALS CHEMISTRY AND CHARACTERISATION II
Chair: Prof Felicity Rose, University of Nottingham

15:15 – 15:45 Larry Hench Young Investigators Prize – Dr Asha Patel, Imperial College London
‘Chemically diverse materials for cell and gene therapy applications’

15:45 – 16:00 Ms Maha Omran, University of Sheffield
Evaluating two powder-based 3d printing techniques for the manufacture of implants for orbital floor repair

16:00 – 17:00 Prizes and Closing Address