



The
University
Of
Sheffield.

Engineering
Medicine
Science

ENGINEERING, MEDICINE & SCIENCE OPEN RESEARCH MEETING

Tuesday 23rd March, 2010

Firth Hall, Western Bank

PROGRAMME

- 09:30 REGISTRATION & COFFEE
- 10:00 Introduction and summary of last year's outcomes and issues / challenges of interdisciplinary research and collaborations
Professor Jon Sayers (Medicine)
Professor Rod Smallwood (Computer Science)
- Feedback from collaborations formed in 2008
- 10:15 Use of Optical Coherence Tomography (OCT) to assess skin properties that affect finger friction
Dr Roger Lewis (Mechanical Engineering), Dr Matt Carre (Mechanical Engineering),
Dr Steve Matcher (Engineering Materials)
- 10:25 Hopping disciplines to study protein-red blood cell interactions with the AFM
Dr Jamie Hobbs (Physics & Astronomy) and Professor Jon Sayers (Medicine)
- 10:35 Inverse Methods for Microfluidic Rheometry
Dr Julia Rees (Mathematics), Professor William Zimmerman (Chemical & Process Engineering),
Dr Hemaka Bandalusena (Chemical & Process Engineering)
- 10:45 In vivo assessment of neutrophil activation and chemotactic gradient inference using image analysis
Dr Stephen Renshaw (Medicine), Dr Carlos Reyes Aldasoro (Medicine), Dr Visakan Kadirkamanathan (Automatic Control & Systems Engineering)
- 10:55 Chondrocytes and stem cells on aminated hydrogels
Dr Steve Rimmer (Chemistry), Professor Philip Wright (Chemical & Process Engineering),
Dr Aileen Crawford (Dentistry)
- Presentations from people seeking to form collaborations
- 11:05 Measurement of adhesion forces between cancer cells and bone marrow endothelial cells using Atomic Force Microscopy (AFM)
Dr Kim Reeves (Oncology)
- 11:15 Bayesian Time Series Models: Estimation, Prediction and Control
Dr Kostas Triantafyllopoulos (Mathematics and Statistics)
- 11:25 Bone tissue engineering: materials and modelling
Dr Gwendolen Reilly (Engineering Materials)
- 11:35 Plenary lecture: Translating the Cardiac Physiome into the clinic
Professor Nic Smith, Professor of Computational Physiology,
University of Oxford

- 12:05 **LUNCH, POSTER VIEWING, & NETWORKING**
- Presentations from people seeking to form collaborations**
- 14:00 **Bone remodelling as a result of vibration stimulations**
Dr Inna Gitman (Mechanical Engineering), Professor Eugene McCloskey (Human Metabolism), Dr Lang Yang (Human Metabolism), Professor Tim Skerry (Human Metabolism)
- 14:10 **Making small molecules and Sheffield Synthesis Solutions**
Professor Iain Coldham (Chemistry)
- 14:20 **Bioengineering soft tissues – nerve and skin using scaffolds, stem cells, bioreactors and imaging**
Dr John Haycock (Engineering Materials)
- 14:30 **CAIMAN: an online algorithm repository for Cancer Image Analysis**
Dr Constantino Reyes-Aldasoro (Oncology)
- 14:40 **Dental descaling and surface cleaning using ultrasonic stimulation**
Christopher Rose (Mechanical Engineering)
- 14:50 **Natural Language Processing at Sheffield**
Mark Stevenson (Computer Science)
- 15:00 **Guiding cells in 2D and 3D**
Dr Frederik Claeysens (Engineering Materials)
- 15:10 **Osteoarthritis: The Case for a Multi-Disciplinary Solution**
Professor Paul Hatton, Centre for Biomaterials & Tissue Engineering and School of Clinical Dentistry
- 15:20 **Resilience to terrorist attack through design for safety and security**
Dr David Fletcher (Mechanical Engineering)
- 15:30 **High field (7T) Small Animal Magnetic Resonance Imaging Facility**
Dr Aneurin James Kennerley (Psychology)
- 15:40 **Microfluidic Devices for Chemical Analysis and Processing**
Dr Jordan MacInnes (Chemical and Process Engineering)
- 15:50 **Next steps / closing thoughts**
Professor Rod Smallwood (Engineering)
Professor Jon Sayers (Medicine)
- 16:00 **CLOSE**