

### Provisional Programme

#### Faraday Discussion 149: Analysis for Healthcare Diagnostics and Theranostics 6–8 September 2010, University of Edinburgh, UK

<b>Monday 6 September 2010</b>	
<b>11:30</b>	<b>Registration</b>
<b>13:00</b>	<b>Welcome and introductions</b>
<b>Session 1</b>	<b>Systems and devices to inform therapy 1</b>
13:15 Paper 1	<b>Introductory Lecture</b> Roger Tsien* <i>University of California, San Diego, USA</i>
14:15 Paper 2	<b>Amplified detection of DNA hybridization using post-labelling with a biotin-modified intercalator</b> Magdalena Gębala, Gerhard Hartwich and Wolfgang Schuhmann* <i>Ruhr-Universität Bochum, Germany</i>
Paper 3	<b>Development of reagents and assays for the detection of pathogenic <i>Burkholderia</i> species</b> Omar Qazi, Mridula Rani, Annie J. Gnanam, Thomas W. Cullen, Christopher M. Stead, Haley Kensing, Kate Johnson, Sarah Ngugi, Joann L. Prior, Alexandria Lipka, Judit M. Nagy, Gregory C. Whitlock, Barbara M. Judy, Sarah V. Harding, Richard W. Titball, Sachdev S. Sidhu, M. Stephen Trent, G. Barrie Kitto, Alfredo Torres, D. Mark Estes, Brent Iverson, George Georgioual and Katherine A. Brown* <i>Imperial College London, UK</i>
<b>15:15</b>	<b>Afternoon tea</b>
15:45 Paper 4	<b>Generic protease detection technology for monitoring periodontal disease</b> Xinwei Zheng, Joseph P. Cook, Michael Watkinson, Shoufeng Yang, Ian Douglas, Andrew Rawlinson and Steffi Krause* <i>Queen Mary University of London, UK</i>
Paper 6	<b>Nucleic acid aptamers: ideal reagents for point-of-care diagnostics?</b> Anthony E. G. Cass* and Yangyang Zhang <i>Imperial College London</i>

<b>16:45</b>	<b>Close of session</b>
<b>17:00</b>	<b>Poster session</b>
<b>18:30</b>	<b>Close of poster session</b>
<b>Tuesday 7 September 2010</b>	
<b>Session 2</b>	<b>Systems and devices to inform therapy 2</b>
09:00 Paper 7	<b>Bridging the bio–detector interface</b> Qifeng Song, Lukas Kurt Josef Stadler, Jianhe Peng and Paul Ko Ferrigno* <i>University of Leeds, UK</i>
Paper 8	<b>Aptameric sensors based on structural change for diagnosis</b> Koichi Abe, Daisuke Ogasawara, Wataru Yoshida, Koji Sode and Kazunori Ikebukuro* <i>Tokyo University, Japan</i>
<b>10:30</b>	<b>Morning coffee</b>
<b>Session 3</b>	<b>Towards real-time clinical measurement 1</b>
11:00 Paper 9	<b>Multi-modal molecular imaging approaches to detect primary cells in preclinical models</b> Kevin Dhaliwal,* Lois Alexander, Geraldine Escher, Asier Unciti-Broceta, Maurits Jansen, Neil McDonald, Juan M. Cardenas-Maestre,bRosario Sanchez-Martin, John Simpson, Chris Hasletta and Mark Bradley <i>MRC Centre for Inflammation Research, Edinburgh, UK</i>
Paper 10	<b>A miniaturised integrated biophotonic point-of-care genotyping system</b> John M. Girkin,* Mazher-Iqbal Mohammed and Elizabeth. M. Ellis <i>Durham University, UK</i>
Paper 11	<b>Diagnostics of small molecular targets based on functional DNA nanotechnology: developing a dipstick test for mercury</b> Seyed-Fakhreddin Torabi and Yi Lu* <i>University of Illinois, USA</i>

<b>12:30</b>	<b>Lunch and poster session</b>
<b>Session 4</b>	<b>Towards real-time clinical measurement 2</b>
14:00 Paper 13	<b>Very quick reverse transcription polymerase chain reaction for detecting 2009 H1N1 influenza A using wire-guide droplet manipulations</b> David J. You, Phat L. Tran, Hyuck-Jin Kwon, Deepa Patel and Jeong-Yeol Yoon* <i>University of Arizona, USA</i>
Paper 14	<b>Multiphoton microscopy of transdermal quantum dot delivery using two photon polymerization-fabricated polymer microneedles</b> Shaun D. Gittard, Philip R. Miller, Ryan D. Boehm, Aleksandr Ovsianikov, Boris N. Chichkov, Jeremy Heiser, John Gordon, Nancy A. Monteiro-Riviere and Roger J. Narayan* <i>University of North Carolina, USA</i>
<b>15:30</b>	<b>Afternoon tea</b>
<b>Session 5</b>	<b>High-throughput methods of analysis</b>
16:00 Paper 15	<b>Single-cell analysis of phosphoinositide 3-kinase and phosphatase and tensin homolog activation</b> Dechen Jiang, Christopher Eldridge Sims and Nancy Lynn Allbritton* <i>UNC Chapel Hill, USA</i>
Paper 16	<b>Peptide-tags for enhanced DNA microarray performance</b> Holger Schulze, Alan J. Ross, Stuart W. J. Ember, Julie Luby, Mizanur Khondoker, Gerard Giraud, Ilenia Ciani, Chaker Tlili, Davide Papale, Jonathan G. Terry, Andrew R. Mount, Anthony J. Walton, Jason Crain, Peter Ghazal, Till T. Bachmann and Colin J. Campbell* <i>University of Edinburgh, UK</i>
Paper 17	<b>Multimodal superparamagnetic nanoplatform for clinical applications: immunoassays, imaging &amp; therapy</b> Laurence Motte,* Farah Benyettou, Caroline de Beaucorps, Marc Lecouvey, Irena Milesovic and Yoann Lalatonne <i>Universite Paris 13, France</i>
<b>17:30</b>	<b>Close of session</b>
<b>19:00</b>	<b>Pre-dinner drinks</b>

19:30	Conference dinner
<b>Wednesday 8 September 2010</b>	
<b>Session 6</b>	<b>Physical techniques for diagnostics</b>
09:00 Paper 18	<b>New ionization methods and miniature mass spectrometers in biomedicine: DESI imaging for cancer diagnostics and paper spray ionization for therapeutic drug monitoring</b> R. Graham Cooks,* Nicholas E. Manicke, Allison L. Dill, Demian R. Ifa, Livia S. Eberlin, Anthony B. Costa, He Wang, Guangming Huang, Zheng Ouyang <i>Purdue University, USA</i>
Paper 19	<b>Development of carbon-fluorine spectroscopy for pharmaceutical and biomedical applications</b> Farid Menaa, Bouzid Menaa* and Olga N. Sharts <i>Flouorotronics Inc., San Diego, USA</i>
Paper 20	<b>Exploiting the diagnostic potential of biomolecular fingerprinting with vibrational spectroscopy</b> Catherine Kendall,* Joanne Hutchings, Hugh Barr, Neil Shepherd and Nicholas Stone <i>Gloucestershire Hospitals NHS Foundation Trust, UK</i>
10:30	Morning coffee
11:00 Paper 21	<b>Combining functionalised nanoparticles and SERS for the detection of DNA relating to disease</b> Duncan Graham,* Ross Stevenson, David G. Thompson, Lee Barrett, Colette Dalton and Karen Faulds <i>University of Strathclyde, UK</i>
Paper 22	<b>Mesoporous silicon photonic crystal microparticles: towards single-cell optical biosensors</b> Bin Guan, Astrid Magenau, Krisopher A. Kilian, Simone Ciampi, Katharina Gaus, Peter J. Reece and J. Justin Gooding* <i>University of New South Wales, Australia</i>
Paper 23	<b>Development of smart nanoparticle–aptamer sensing technology</b> Haiyan Zhang, Peter G. Stockley and Dejian Zhou* <i>University of Leeds, UK</i>

12:30 Paper 24	<b>Concluding Remarks</b> Pankaj Vadgama* <i>Queen Mary University of London, UK</i>
<b>13:00</b>	<b>Acknowledgements</b>
<b>13:15</b>	<b>Close of meeting</b>

\* Denotes presenting author to whom affiliation applies