British Chapter of ISMRM
26th Postgraduate Symposium

18th May 2018
St. Mary’s Campus, Imperial College London

@BCISMRM
Dear Participant,

We would like to welcome you to the 26th postgraduate symposium of the British Chapter of ISMRM and to Imperial College London. This day-long meeting will be a showcase of research conducted by junior researchers (both post-graduate students and junior postdocs) in the UK - a platform on which to present their work, with fantastic networking opportunities. Beside an extensive scientific program, you will also have the opportunity to socialize and network during the breaks and lunch, with the option to continue the discussion over drinks after the conference. We strongly encourage everyone to meet and engage with presenters during the poster sessions, and to visit all sponsor booths during lunch and the coffee breaks.

For the first time, this year there will also be a 1-hour session to discuss career paths and options after your PhD or post-doc. Speakers presenting during this session, all of which have completed a PhD or post-doc, will share their experiences from years of working in academia, clinical science, consultancy and research management. They will also be around during lunch, so please do make sure to have a chat with them if their career path is something you are interested in. We hope that this meeting will help you to enhance your career, form productive new collaborations, and develop innovative scientific research.

We would like to take this opportunity to thank our sponsors for their generous contributions: Bruker (Platinum), Siemens (Platinum), GE (Platinum), Imaging Equipment Ltd (Gold), Leeds Test Objects (Silver), Xinapse Systems (Bronze) and PulseTeq Ltd (Bronze). We would also like to thank Prof Penny Gowland for opening and closing the meeting; the speakers in the careers session; the British Chapter of the ISMRM committee, particularly Dr Po-Wah So, for their support; the reviewers, for rating all abstracts; the chairs, for moderating the scientific sessions; the panels choosing the abstracts for the prizes; and, most importantly, the authors and presenters of the abstracts we received this year.

Finally, the organisation of this meeting would have been impossible without all the hard work from this year’s organising committee over the past year. Their commitment to creating a high-quality programme for this symposium has been truly inspiring.

Enjoy the Symposium!

Matthew Grech-Sollars
Organising Committee Coordinator
Please speak to us if you have any queries! All of us will be able to help you out. However, if you have a specific query related to one of the sections below, please do not hesitate to contact the lead for the specific section directly.

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Jodi Watt  
*Lead on Prizes*  
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Programme

9:50 – 10:20  Registration, Tea and Coffee  
St Mary’s Medical School G62 – Committee Room

10:20 – 10:25  General Introduction and Welcome  
Dr Matthew Grech-Sollars (Imperial College London)  
St Mary’s Medical School Anthony de Rothschild Lecture Theatre (Floor 2)

10:25 – 10:30  Welcome  
Prof Penny Gowland (Chair of the BC-ISMRM, The University of Nottingham)

10:30 – 11:30  Oral Session 1: Cardiac Imaging and Perfusion  
Moderators: Isabel Dregely (KCL) and Ben Statton (Imperial College London)

O1. Mildronate Increases PDH-Flux in Control Hearts, but Fails to Show Metabolic Changes in Streptozotocin-Treated Diabetic Hearts using Hyperpolarized MRS.  
Dragana Savic1, Lorenz Holzner1, Vicky Ball1, M. Kate Curtis1, Lisa Heather1 & Damian Tyler1.  
1University of Oxford, UK.

Aurélien Bustin1, Giulia Ginami1, Imran Rashid1, Teresa Correia1, Tevfik F. Ismail1, Radhouene Neji1,2, René M. Botnar1, Claudia Prieto1.  
1School of Biomedical Engineering and Imaging Sciences, King’s College London, UK;  
2MR Research Collaborations, Siemens Healthcare Limited Frimley, UK.

O3. Vessel-encoding improves compressed sensing reconstruction of arterial spin labelling angiograms.  
S. Sophie Schauman1, Mark Chiew1, Thomas W. Okell1.  
1Wellcome Centre for Integrative Neuroimaging, FMRIB, NDCN, University of Oxford, UK.

O4. Comparison of Tofts and Shutter Speed Model for DCE-MRI in patients with Brain Glioma.  
Marianna Inglese1,2, Lesley Honeyfield3, Eric Aboagye3, Adam D. Waldman4,5, Matthew Grech-Sollars1,3.  
1Department of Surgery and Cancer, Imperial College London, UK; 2Department of Computer, Control and Management Engineering Antonio Ruberti, La Sapienza University of Rome, Italy; 3Department of Imaging, Imperial College London Healthcare NHS Trust, UK; 4Department of Medicine, Imperial College London, UK; 5Centre for Clinical Brain Sciences, University of Edinburgh, UK.

O5. Characterising and correcting the effect of motion on quantitative CBF measured with multishot 3D GRASE ASL.  
Jack Highton1, Enrico De Vita2, Jonathan Schott3, David L. Thomas3.  
1Department of Medical Physics and Biomedical Engineering, University College London, UK; 2Department of Biomedical Engineering, King’s College London, UK; 3University College London Institute of Neurology, UK.
11:30 – 11:50 Poster Pitches Session 1 (P1 - P13); Moderator: Tobias Wood (KCL)

11:50 – 12:00 Vendor Pitches

12:00 – 13:00 Career Talks
   Academia – Dr Eleftheria Panagiotaki (UCL)
   Clinical Science – Dr Mary Finnegan (Imperial College Healthcare NHS Trust)
   Coaching, Consultancy and Training – Dr Emma Williams (EJW Solutions Limited)
   Research Management – Dr Jamie Meredith (Imperial College London)

13:00 – 13:20 Lunch and Networking
   G62 and G64

13:20 – 13:50 Posters Session 1 (P1-P13), Lunch and Networking
   G62

14:00 – 15:00 Oral Session 2: Susceptibility and Semi-automated Approaches
   Moderators: Flavio dell’Acqua (KCL) and Catarina Rua (University of Cambridge)

O6. Magnetic Susceptibility Mapping (SM) Reveals Altered Venous Oxygen Saturation (SvO₂) in Patients with Brain Arteriovenous Malformations (AVMs).
   Emma Biondetti¹, Alvaro Rojas Villabona², Rolf Jäger², David L. Thomas²,³ & Karin Shmueli¹.
   ¹Department of Medical Physics & Biomedical Engineering, University College London, UK; ²Neuroradiological Academic Unit, Department of Brain Repair & Rehabilitation, Institute of Neurology, University College London, UK; ³Leonard Wolfson Experimental Neurology Centre, Institute of Neurology, University College London, UK.

O7. Susceptibility-weighted MRI provides predictive biomarkers of response to vascular endothelial growth factor receptor inhibition in the Th-MYCN model of neuroblastoma.
   K. Zormpas-Petridis¹, M. D. Blackledge¹, L. Chesler¹, Y. Yuan¹, S. P. Robinson¹ & Y. Jamin¹.
   ¹The Institute of Cancer Research, London and The Royal Marsden NHS Trust, UK.

   Russell Murdoch¹, Jamie Kawadler², Mboka Jacob³, Fenella Kirkham⁴, Karin Shmueli¹.
   ¹Medical Physics and Biomedical Engineering, University College London, UK; ²Imaging and Biophysics Unit, University College London Institute of Child Health, UK; ³Muhimbili University of Health and Allied Sciences, Dar es Salaam, Tanzania; ⁴Neurosciences Unit, University College London Institute of Child Health, UK.

O9. Semi-Automatic Registration of Histological Images to Post-Mortem MRI.
   István N. Huszar¹,², Karla L. Miller¹,², Mena Pallebage-Gamarallage², Olaf Ansorge², Christopher Mirfin³, Mattias P. Heinrich⁴, an Mark Jenkinson¹,².
   ¹Wellcome Centre for Integrative Neuroimaging (WIN), FMRIB, University of Oxford, UK; ²Nuffield Department of Clinical Neurosciences, University of Oxford, UK; ³Sir Peter
O10. Accelerated 3D T2 mapping with dictionary-based matching for prostate imaging.
Elisa Roccia1, Rohini Vidya Shankar1, Radhouene Neji2, Gastao Cruz1, Rene Botnar1, Claudia Prieto1, Vicky Goh3, Isabel Dregely1.
1Department of Biomedical Engineering, King’s College London, UK; 2Siemens Healthcare Limited Frimley, UK; 3Department of Cancer Imaging, King’s College London, UK.

15:00 – 16:00 Oral Session 3: Low/High field Imaging and Spectroscopy
Moderators: Maureen Dumba (Imperial NHS) and Patrick Hales (UCL)

O11. Improved detection of pancreatic cancer with an Al 3D Mouse Atlas Tool using low field MRI.
1Centre of Molecular Oncology, Barts Cancer Institute, Queen Mary University of London, UK; 2Contract Research, inviCRO, London, UK; 3Centre of Cancer and Inflammation, Barts Cancer Institute, Queen Mary University of London, UK; 4Image Analysis, inviCRO, Boston, USA.

O12. Human Cardiac 31P-MRS at 7T: a reproducibility study.
Jane Ellis1, Ladislav Valkovic1, Lucian A. B. Purvis1, William T. Clarke1, Christopher T. Rodgers1,2.
1University of Oxford, UK; 2Wolfson Brain Imaging Centre, University of Cambridge, UK.

O13. Predictors and Evolution of Radiotherapy-Induced Cerebral Microbleeds with White Matter Changes in Adult Brain Tumor Patients: a 7T MRI study.
Melanie A. Morrison1, C. P. Hess1, J. Clarke1, N. Butowski1, S. Chang1, J. M. Lupo1.
1University of California San Francisco, USA.

Maria Yanez Lopez1, Nicoleta Baxan1, Cornelius Donat1, Magdalena Sastre1.
1David Sharp Department of Medicine, Imperial College London, UK.

O15. Metabolic assessment of normothermically perfused ex vivo livers by multi-nuclear magnetic resonance imaging and spectroscopy.
Liam Young1, Carlo Ceresa2, Jack Miller3, Ladislav Valkovic1, Daniel Voyce4, Justin Lau3, Annemarie Weissenbacher2, Jane Ellis1, Ferenc Mozes4, Damian Tyler3, Peter Friend2, Constantin Coussios5, Christopher Rodgers1,6.
1OCMR, RDM Cardiovascular Medicine, University of Oxford, UK; 2Nuffield Dept Surgical Sciences, University of Oxford, UK; 3Dept of Physiology, Anatomy and Genetics, University of Oxford, UK; 4OrganOx Ltd, UK; 5Institute of Biomedical Engineering, University of Oxford, UK; 6Wolfson Brain Imaging Centre, University of Cambridge, UK.

16:00 – 16:15 Poster Pitches Session 2 (P14-P26); Moderator: Tobias Wood (KCL)

16:15 – 16:50 Coffee and Posters Session 2 (P14-P26)
G62 and G64
17:00 – 18:00 Oral Session 4: Diffusion Imaging

Moderators: Gareth Barker (KCL) and Clare Gibbard (UCL)

Pedro A. Luque Laguna1,2, Francisco de Santiago Requejo1, Steven Williams2, Laura H. Goldstein3, Marco Catani3, and Flavio Dell’Acqua1,2,4.
1Natbrainlab, Forensic and Neurodevelopmental Science, King’s College London, UK; 2Department of Neuroimaging, King’s College London, UK; 3Department of Psychology, King’s College London, UK; 4The Sackler Institute for Translational Neurodevelopment, King’s College London, UK.

Eleni Chiou1, Francesco Giganti3,4, Elisenda Bonet Carne1,2, Shonit Punwani2, Iasonas Kokkinos2, Eleftheria Panagiotaki2.
1Department of Computer Science, University College London, UK; 2Centre for Medical Imaging, Division of Medicine, University College London, UK; 3Department of Radiology, University College London Hospital NHS Foundation Trust, UK; 4Division of Surgery & Interventional Science, University College London, UK.

O18. Variable density interleaved spiral readouts for high resolution in-vivo diffusion tensor cardiovascular magnetic resonance.
Margarita Gorodezky1, Andrew D. Scott1, Pedro F. Ferreira1, Sonia Nielles-Vallespin3, Peter D. Gatehouse1, Dudley J. Pennell1, David N. Firmin1.
1Cardiovascular Magnetic Resonance Unit, Royal Brompton Hospital, National Heart and Lung Institute, Imperial College London, UK.

O19. Principal component analysis for model-free denoising of multi b-value diffusion-weighted MRI images.
Oliver J. Gurney-Champion1, D. J. Collins1, A. Wetscherek1, M. Rata1, U. Oelfke1, K. Harrington1 & M. R. Orton1.
1The Institute of Cancer Research and The Royal Marsden NHS Foundation Trust, London, UK.

O20. Multi-platform reproducibility of advanced diffusion weighted MRI parameters in phantoms and healthy volunteers.
Shah Islam1, Matthew Grech-Sollars2, Matthew Orton3, Adam Waldman4
1Department of Medicine, Imperial College London, UK; 2Department of Surgery and Cancer, Imperial College London, UK; 3MRI physics group, Institute of Cancer Research, UK; 4Centre for Clinical Brain Sciences, University of Edinburgh, UK.

18:00 – 18:10 Election of Trainee Member for the BC-ISMRF Committee

18:10 – 18:20 Presentation of Prizes

18:20 – 18:30 Closing Remarks – Prof Penny Gowland

19:00 – Evening Reception – KuPP, 53 Merchant Square, London W2 1AS
Poster Session 1: P1-P13

P1. Investigating visual pathways in children undergoing epilepsy surgery and associated deficits
Luis Miguel Lacerda1, Martin Tisdall2, Gavin Winston1, Sian Handley4, Alki Liasis4, Chris A. Clark1
1Developmental Imaging and Biophysics Section, UCL Great Ormond Street Institute of Child Health, UK;
2Neurosurgery, UCL Great Ormond Street Institute of Child Health, London, UK; 3Department of Clinical and Experimental Epilepsy, UCL Institute of Neurology, London, UK; 4Ophthalmology, UCL Great Ormond Street Institute of Child Health, London, UK.

P2. Investigating Local and Global Connectivity in Temporal Lobe Epilepsy
Bianca De Blasi1, Ilaria Boscolo Galazzo2, Anna Barnes3, Matthias Koepp4
1University College London, UK; 2University of Verona, Italy; 3UCLH Institute of Nuclear Medicine, UK; 4Institute of Neurology, University College London, UK.

P3. Subnetwork Classification Methods
Elizabeth C. A. Powell1,2, Ferran Prados2,3, Baris Kanber2,3, Wallace Brownlee2, Sara Collorone2, Sebastien Ourselin1, Olga Ciccarelli2, Ahmed Toosy2, Jonathan D Clayden4, Claudia AM Gandini Wheeler-Kingshott2
1Medical Physics and Biomedical Engineering, University College London, UK; 2Queen Square MS Centre, University College London, UK; 3Translational Imaging Group, University College London, UK; 4Great Ormond Street Institute of Child Health, University College London, UK.

P4. The Analysis of High Resolution Diffusion Tensor Imaging Data to Characterise a Mouse Model of Intellectual Disability
William Middleham1, Thomas Leather1, Harish Poptani1
1Centre for Preclinical Imaging, University of Liverpool, UK.

P5. Demonstrating time-dependent diffusion MR in phantoms
Laurent Blom1, Clémentine Lesbats1, Harish Poptani1
1Centre for Preclinical Imaging, University of Liverpool, UK.

P6. High resolution with online reconstruction of in vivo cardiac DTI
Malte Röhl1, P. F. Ferreira1, P. Gatehouse1, D. N. Firmin1
1Royal Brompton Hospital, UK.

P7. Cerebellar white matter disruption in AD patients: a Diffusion Tensor Imaging study
Sofia Toniolo1, L. Serra2, G. Olivito2, C. Marra3, M. Cercignani1, M. Bozzali1
1Clinical Imaging Sciences Centre, Brighton, UK; 2Neuroimaging Laboratory, Santa Lucia Foundation, Italy; 3Institute of Neurology, Catholic University, Italy.

P8. Development of an Automated Quality Control Method for Dynamic Susceptibility Contrast (DSC-) MRI
Stephen Powell1,2,3, Stephanie Withey2,3,4, Yu Sun2,3,5, Andrew Peet2,3
1Physical Sciences for Health CDT, University of Birmingham, UK; 2Institute of Cancer and Genomic Sciences, University of Birmingham, UK; 3Birmingham Children’s Hospital, UK; 4University Hospitals
Birmingham NHS Foundation Trust, UK; 5School of Biological Sciences and Medical Engineering, Southeast University, China.

P9. Susceptibility Mapping in Normal Bone Marrow and Fat Metaplasia
Anita Karsa1, Tim Bray2,4, Alan Bainbridge3, Shonit Punwani2, Margaret A. Hall-Craggs2, Karin Shmueli3
1Department of Medical Physics and Biomedical Engineering, University College London, UK; 2Centre for Medical Imaging, University College London, UK; 3Department of Medical Physics, University College London Hospitals, UK; 4Arthritis Research UK Centre for Adolescent Rheumatology, University College London, UK.

P10. The Alignment Index (AI): A Collagen fibre orientation distribution analysis
Karyn E Chappell1, Catherine Van Der Straeten1, Wladyslaw Gedroyc1, Donald McRobbie1, Djordje Brujic2
1Department of Surgery and Cancer, Imperial College London, UK; 2Department of Mechanical Engineering, Imperial College London, UK.

P11. Accelerating Golden Angle-Sampled Low-Rank FMRI with Low-Resolution Constraints
Harry Mason1, Karla Miller1, Mark Chiew1
1University of Oxford, UK.

P12. Locally Low Rank Regularization for Magnetic Resonance Fingerprinting
G. Cruz1, A. Bustin1, O. Jaubert1, T. Schneider2, R. M. Botnar1, C. Prieto1
1School of Biomedical Engineering and Imaging Sciences, King’s College London, UK; 2Philips Healthcare, Guilford, UK.

P13. Rigid motion corrected low rank magnetic resonance fingerprinting
G. Cruz1, O. Jaubert1, S. Malik1, T. Schneider2, R. M. Botnar1, C. Prieto1
1School of Biomedical Engineering and Imaging Sciences, King’s College London, UK; 2Philips Healthcare, Guilford, UK.
Poster Session 2: P14-P26

P14. Motion Estimation using the Scattering of 8-channel pTx Coils at 7T MRI
Sven H.F. Jaeschke1, Daniel Papp2, Matthew D. Robson3, Aaron T. Hess1
1University of Oxford Centre for Clinical Magnetic Resonance Research, UK; 2The Wellcome Centre for Integrative Neuroimaging, UK.

P15. Minimum-TR pulse design for rapid gradient echo sequences
Samy Abo Seada1, Arlan Beqiri1, Anthony N. Price1, Joseph V. Hajnal2, Shaihan J. Malik1
1School of Biomedical Engineering and Imaging Sciences, King’s College London, UK.

P16. Water cycled single voxel spectroscopy for cardiac 1H MRS
Belinda Ding1, Ferenc Mozes1, Ladislav Valkovic1, Christopher Rodgers1, 2
1Oxford Centre for Clinical Magnetic Resonance Research, University of Oxford, UK; 2Wolfson Brain Imaging Centre, University of Cambridge, UK.

P17. Association between pharmacokinetic parameters from DCE-MRI and metabolic parameters from dynamic 18F-fluoromethylcholine PET in human brain glioma.
Marianna Inglese1, 2, Matthew Grech-Sollars1, 3, Katherine Ordidge3, Vijay Vaja1, Lesley Honeyfield3, Sameer Khan3, Tara Barwick1, 3, Eric Aboagye1, Adam D Waldman4, 5
1Department of Surgery and Cancer, Imperial College London, UK; 2Department of Computer, Control and Management Engineering Antonio Ruberti, La Sapienza University of Rome, Italy; 3Department of Imaging, Imperial College Healthcare NHS Trust, UK; 4Department of Medicine, Imperial College London, UK; 5Centre for Clinical Brain Sciences, The University of Edinburgh, UK.

P18. Diffusion-weighted and kurtosis MRI in a glioma rat model
Clémentine Lesbats1, Claire Kelly1, Harish Poptani1
1The University of Liverpool, UK.

P19. Real-Data Reconstruction to Remove Rician Bias from DKI of the Prostate
Rosie J Goodburn1, Andrew N Priest1
1Cambridge University Hospitals NHS Foundation Trust, UK.

P20. Detecting Prostate Cancer with neural networks on multi-echo T2 images
William Devine1, Francesco Giganti2, Edward Johnston1, Shonit Punwani1, Daniel C. Alexander3, David Atkinson1
1Centre for Medical Imaging, University College London, UK; 2Department of Radiology, University College London Hospital NHS Foundation Trust, UK; 3Centre for Medical Image Computing, University College London, UK.

P21. Oxygen enhanced MRI for imaging hypoxia in head and neck cancer xenografts
Elise Lepicard1, Jessica K. R. Boul1, Yann Jamin1, Konstantinos Zormpas-Petridis1, Adam K. Featherstone2, Rafal Panek3, Carol Box1, James P. B. O’Connor4, Simon P. Robinson1
1Division of Radiotherapy and Imaging, The Institute of Cancer Research, UK; 2Centre for Imaging Sciences, University of Manchester, UK; 3Department of Medical Physics and Clinical Engineering, Nottingham University Hospitals, UK; 4Institute of Cancer Sciences, University of Manchester, UK.
P22. Dosimetric Evaluation of Midposition Pseudo-CT for MR-only Lung Radiotherapy Treatment planning
Joshua N. Freedman1,2, Hannah Bainbridge3, Andreas Wetscherek1, David J. Collins2, Martin O. Leach2, Marc Kachelrieß4, Simeon Nill1, Fiona McDonald3, Uwe Oelfke1.
1Joint Department of Physics, Institute of Cancer Research and the Royal Marsden NHS Foundation Trust, UK; 2CR UK Cancer Imaging Centre, Institute of Cancer Research and the Royal Marsden NHS Foundation Trust, UK; 3Joint Department of Radiotherapy, Institute of Cancer Research and the Royal Marsden NHS Foundation Trust, UK; 4Medical Physics in Radiology, The German Cancer Research Center (DKFZ) Heidelberg, Germany.

P23. Slice-by-slice comparison of quantitative small bowel motility metrics from dynamic MRI in Crohn’s disease patients with a range of symptom severities
Ruaridh M. Gollifer1, Alex Menys1, Frans M. Vos2,3, Jaap Stoker2, Stuart A. Taylor1, David Atkinson1
1Centre for Medical Imaging, University College London, UK; 2Department of Radiology, Academic Medical Center (AMC), Netherlands; 3Quantitative Imaging Group, Delft University of Technology, Netherlands.

Ali Alyami1,2,3, Caroline Hoad2,3, Penny Gowland3, Uday Bannur4, Khalid Latief4, and Gordon Moran1,2
1Nottingham Digestive Diseases Centre and NIHR Nottingham Biomedical Research Centre at Nottingham University Hospitals NHS Trust and University of Nottingham, UK; 2Diagnostic Radiology Department, Jazan University, Saudi Arabia; 3Sir Peter Mansfield Imaging Centre, University of Nottingham, UK; 4Diagnostic Radiology Department, Queens’ Medical Centre Campus, UK.

P25. T1 and T2* measurements in the liver and kidneys at 3 and 7 Tesla
Emma Doran1, Stephen Bawden1, Susan Francis1, Richard Bowtell1, Penny Gowland1
1Sir Peter Mansfield Imaging Centre, University of Nottingham, UK.

P26. Measuring T2 and ADC of abdominal lymph nodes
Hannah G. Williams1, Caroline L. Hoad1,2, Robert Scott1,2, Luca Marciani2,3, Penny A. Gowland1,3
1Sir Peter Mansfield Imaging Centre, University of Nottingham, UK; 2NIHR Nottingham Biomedical Research Centre at the Nottingham University Hospitals NHS Trust and University of Nottingham, UK; 3Nottingham Digestive Diseases Centre, University of Nottingham, UK.