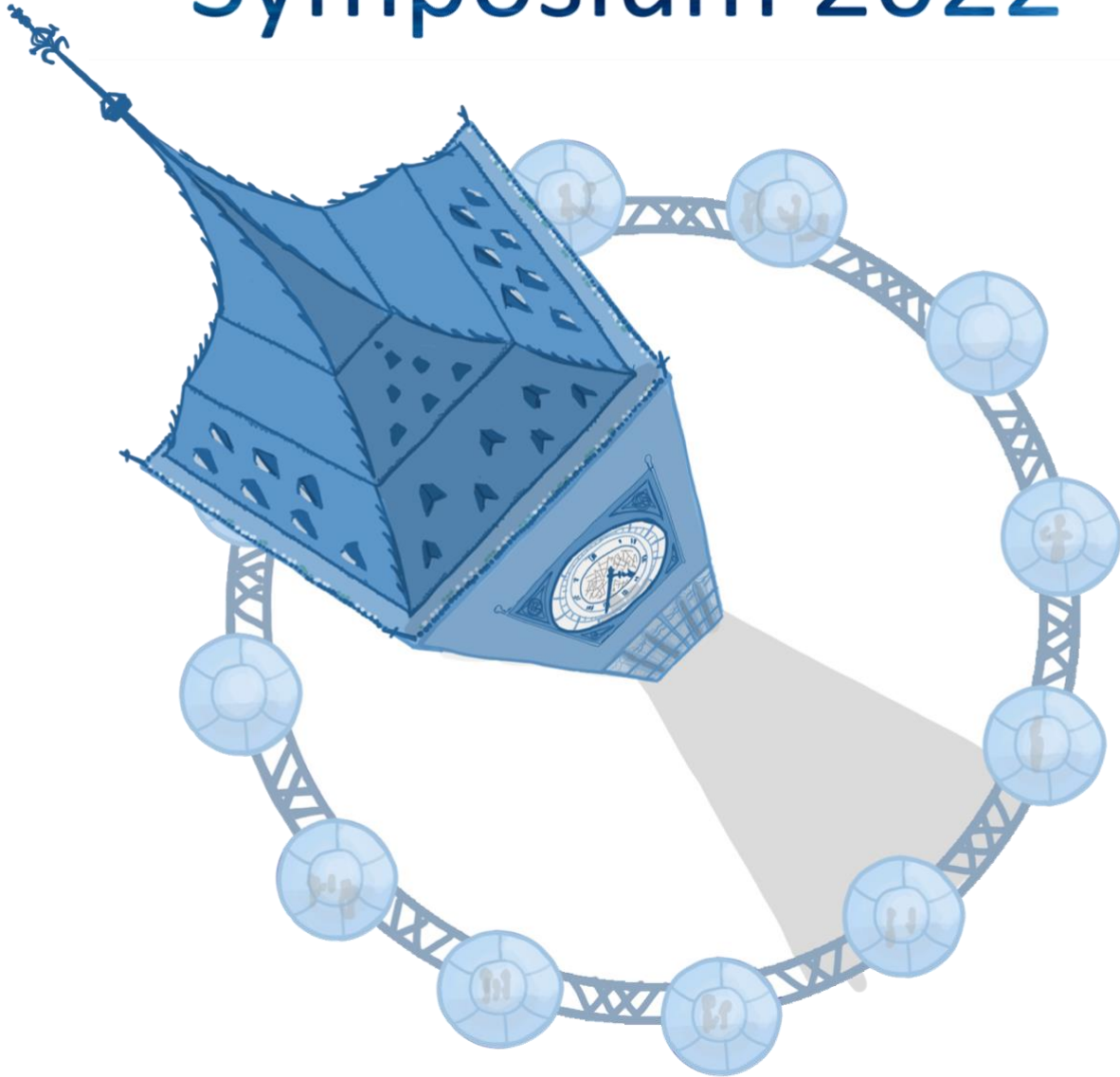


ISMRRM | British & Irish
CHAPTER

30th

Postgraduate Hybrid Symposium 2022



Strand Campus, King's College London
5th April 2022



SPIN ME IN

KING'S
College
LONDON

Welcome

Welcome to the 30th BIC-ISMRRM Postgraduate Symposium. Like the main ISMRRM meeting in May, this will be our first-ever hybrid conference. The same virtual and onsite posters and oral presentations will be available both online and onsite, including talks, networking opportunities and games. Click **HERE** to **join the Gather Town venue** and browse the conference posters virtually.

The theme of this Postgraduate Symposium is “**getting ready for London 2022**”. The main ISMRRM meeting in May this year will be the first time many of us are attending an ISMRRM meeting in-person. Those who’ve been around for longer will tell you it’s often the highlight of the year for MRI researchers. With the meeting in London, the Chapter needs your help to help make it an unforgettable week. #SpinMeIn

Want to be kept in the loop? Scan the QR code below to sign up for Chapter membership. Why not browse the BIC-ISMRRM **website**? As well as the new MR Education Series, you’ll find links to sign up for the Chapter **newsletter** (Positive Spin), follow us on **Twitter**, or join the **JISC** mailing list.

Fill in this **~5 min survey** after the symposium, by the 20th of April, for a chance to win a **£30 Amazon voucher**

CLICK HERE



Organising Committee

Please speak to us if you have any queries!



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Reviewers & Prize Judges

Reviewers

- Heather Fitzke (University College London)
- Matthew Birkbeck (Newcastle University)
- Sarah Needleman (University College London)
- Mary Neal (Newcastle University)
- Emma Reeves (Institute of Cancer Research)
- Chris Bradley (University of Nottingham)
- Ian Storey (St George's, University of London)
- Mo Shahdloo (University of Oxford)
- Alix Plumley (Cardiff University)
- Patrick Fuchs (University College London)
- Mark Platt (University of Liverpool)
- Elisabeth Pickles (University of Oxford)
- James Grist (University of Oxford)
- Joana Pinto (University of Oxford)
- Pete Lally (Imperial College London)
- Cristiana Tisca (University of Oxford)

Prize Judges

- Gareth Barker (King's College London)
- Patrick Fuchs (University College London)
- Anita Karsa (University College London)
- Heather Fitzke (University College London)
- Tobias Wood (King's College London)
- Thomas Wilkinson (King's College London)
- Harriet Rogers (University College London)

Many thanks to abstract reviewers and prize judges for their contributions!

Programme at a Glance

	Onsite	Virtual
10:00 - 10:30	REGISTRATION (Bush House) (Lecture Theatre 1 breakout space)	POSTER BROWSING (Gather Town)
10:30 - 10:40	Welcome Plenary (Lecture Theatre 1 & Gather Town) <i>Opening remarks - Dr Po-Wah So</i>	
10:40 - 11:35	Onsite Oral Presentations (Lecture Theatre 1 & Gather Town)	
11:35 - 12:00	Power Pitch Poster Presentations (Lecture Theatre 1 & Gather Town)	
12:15 - 12:50	LUNCH (Lecture Theatre 1 breakout space)	Virtual Poster Presentations 1 (Gather Town, P1-6)
12:50 - 13:25		Virtual Poster Presentations 2 (Gather Town, P7-11)
13:30 - 14:00	Onsite Poster Presentations Q&A (BH(S) 1.03, 1.04)	BREAK
14:00 - 14:30	Remote Oral Presentations (Lecture Theatre 1 & Gather Town)	
14:30 - 15:15	Plenary - ISMRM London 2022 (Lecture Theatre 1 & Gather Town) <i>Getting the Most out of ISMRM - Dr Gareth Barker</i> <i>Spin Me In: ISMRM HQ - Dr David Carmichael</i>	
15:15 - 15:45	TEA AND COFFEE	BREAK
15:45 - 17:00	MRI Tycoon (Lecture Theatre 1 & Gather Town) <i>Team building enterprise game - Dr Thomas Wilkinson</i>	
17:00 - 17:45	Closing Plenary (Lecture Theatre 1 & Gather Town) <i>Meet your next student representatives</i> <i>Presentation prize ceremony - Dr Po-Wah So</i>	
	End of symposium	
18:00 - 20:30	Evening Social	

Programme in Detail

	Onsite	Virtual
10:00 - 10:30	REGISTRATION (Bush House) (Lecture Theatre 1 breakout space)	POSTER BROWSING (Gather Town)
10:30 - 10:40	Welcome Plenary (Lecture Theatre 1 & Gather Town) Opening remarks - Dr Po-Wah So	
10:40 - 11:35	Onsite Oral Presentations (Lecture Theatre 1 & Gather Town)	

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O1.2	Ian Storey	Model free parameter estimation using fully connected neural networks in quasi diffusion tensor imaging	17
O1.3	Cristiana Tisca	Multi-modal MRI reveals brain microstructure changes in a mouse model with altered extracellular matrix	18
O1.4	Aisling Fothergill	Determining the Effect of 3-ply and KN95 Facemasks on Cerebral Blood Flow and Oxygenation using ASL and QSM	19
O1.5	James Kent	sat2TFL: Rapid B1+ Mapping using an Adapted Saturated TurboFLASH Sequence at 7T	20

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13:30 - 14:00	Onsite Poster Presentations Q&A (BH(S) 1.03, 1.04)	
	1.03	P1, P8
	1.04	P2, P6, P10
		BREAK

Number	Presenter Name	Title	Page
P1	Elena Grosso	A personalized-NODDI pipeline increases sensitivity to microstructural alterations in temporal lobe epilepsy	24
P2	Dominic Harrison	Development of 1H test objects with spin density and relaxation properties to mimic inhaled perfluoropropane in 19F-MRI ventilation imaging	25
P3	Ross Shaw	Accounting for Intra-voxel dephasing in the simultaneous measurement of R2 and R2' In a Gradient Echo Sampling of A Spin Echo Sequence at 7T	26
P4	Samuel Rot	Reconstruction and quantification of undersampled brain sodium (²³ Na) MRI with total generalised variation (TGV) regularisation	27
P5	Elisabeth Pickles	Liver Iron Quantification at 3 T	28
P6	Oliver C. Kiersnowski	Geometric Distortion Correction to Improve EPI Quantitative Susceptibility Mapping	29
P7	Nabeelah Jinnah	The z-spectrum of collagen in various physiological conditions	30
P8	Emma Thomson	Feasibility of Quantifying ν_b , τ_b , $T_{1,b}$ $T_{1,e}$ and B_1^+ Simultaneously Using Non-Contrast MR Fingerprinting	31
P9	Jannette Nassar	Investigation of Slice Dependent Artifacts in EPI Phase Images	32
P10	Eve Shalom	A Proof of Concept Study: Towards recovery of spatial kinetic parameters in two compartment systems	33
P11	Daniel Cocking	Deuterium brain imaging at 7T during D2O loading	34

	Onsite	Virtual
14:05 - 14:30	Remote Oral Presentations (Lecture Theatre 1 & Gather Town)	

Number	Presenters Name	Title	Page
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O2.2	Ebony Gunwhy	Quantification of organ motion during prolonged breath-holding using deformable image registration	22
O2.3	Sarah Needleman	Signal Characterisation of Oxygen-Enhanced MRI for Functional Lung Imaging	23

14:30 - 15:15	Plenary - ISMRM London 2022 (Lecture Theatre 1 & Gather Town) <i>Getting the Most out of ISMRM - Dr Gareth Barker</i> <i>Spin Me In: ISMRM HQ - Dr David Carmichael</i>	
15:15 - 15:45	TEA AND COFFEE	BREAK

With over 30 years of ISMRM meetings under his belt, Gareth Barker will let us know (or remind us) what to expect and **how to make the most of the conference**. We'll learn from Gareth that there's more to the conference than listening to talks – it's just as important to have fun (yes, really!), make connections, and build a professional network. David Carmichael will tell us about the **ISMRM HQ venue**. This venue will be the at the heart of the conference, providing a space to escape the mad rush, to relax and chat, or play games and activities. We also need your help to help run the venue! #SpinMeIn

15:45 - 17:00	MRI Tycoon (Lecture Theatre 1 & Gather Town) <i>Team building enterprise game - Dr Thomas Wilkinson</i>	
17:00 - 17:45	Closing Plenary (Lecture Theatre 1 & Gather Town) <i>Meet your next student representatives</i> <i>Presentation prize ceremony - Dr Po-Wah So</i>	
	End of symposium	
18:00 - 20:30	Evening Social	

Join us at the Seven Dials BrewDog for the after party!

Meet the Presenters

O1.1) Oriana Arsenov *she/her*
oriana.arsenov.16@ucl.ac.uk

<https://www.ucl.ac.uk/medical-physics-biomedical-engineering/research/research-groups/magnetic-resonance-imaging-group>

Hi, my name is Oriana Arsenov. I'm a 2nd year PhD student at UCL and part of the Magnetic Resonance Imaging Group. My research is on electrical conductivity mapping for neuroimaging and quantitative susceptibility mapping.



O1.2) Ian Storey *he/him*

m1907464@sgul.ac.uk
<https://www.sgul.ac.uk>



Hi, my name is Ian Storey and I'm a 3rd year PhD student at St George's, University of London. My research includes deep learning applications to automatic tumour classification and model free optimisation of quasi-diffusion imaging.

O1.3) Cristiana Tisca *she/her*

cristiana.tisca@linacre.ox.ac.uk

<https://www.ndcn.ox.ac.uk/team/cristiana-tisca> <https://twitter.com/cetisca>

I'm a DPhil student working in imaging genetics under the supervision of Prof Karla Miller and Dr Aurea Martins-Bach. My research interest lies at the interface of magnetic resonance imaging, neuroscience, and genetics. My studies build on genome-wide association studies conducted using the UK Biobank brain imaging data, which have shown associations between a large number of image-derived phenotypes and genetic variants. To understand these associations, I characterise mouse models where equivalent genes have been modified using MRI and histology. Outside my studies, I am particularly passionate about discussing and addressing issues faced by women working in science and engineering. I love board games and nature walks!



O1.4) Aisling Fothergill

aisling.fothergill@postgrad.manchester.ac.uk

<https://www.bmh.manchester.ac.uk/>

<https://www.ncaresearch.org.uk/gjbrainresearch/>



Hi! I am in the first year of my PhD at the University of Manchester. My work is focussed on the use of amide proton transfer and arterial spin labelling for quantitative measures in glioma imaging. Previously I completed my undergraduate degree at the University of British Columbia and was working in the UBC MRI research group. Outside of my research I enjoy spending my time climbing both indoors and in the peak district!

O1.5) James Kent *he/him*

james.kent@ndcn.ox.ac.uk
<https://www.rdm.ox.ac.uk/people/james-kent>



Hi! I'm James and I am a 2nd year DPhil student at the FMRIB centre in Oxford, where I am working on B1 mapping and motion correction methods for parallel transmit MRI at 7T.

O2.1) Daniel Kor *he/him*

daniel.kor@ndcn.ox.ac.uk
<https://www.ndcn.ox.ac.uk/team/daniel-kor>

Online Only



Hi, I am Daniel Kor, and I'm currently a DPhil student at the Wellcome Centre for Integrative Neuroimaging at the University of Oxford. My research focuses on comparing histology with MRI to understand the biophysical basis of MRI signals. At this symposium, I will be presenting a workflow that facilitates voxel wise MRI-histology correlations.

Online Only

O2.2) Ebony Gunwhy *she/her*
E.Gunwhy@sheffield.ac.uk

I have recently joined the University of Sheffield as a research assistant, investigating MRI biomarkers of the liver in conjunction with drug toxicity. Prior to this, I completed a MSc in Biophysics and Biophotonics at the University of Amsterdam, where I worked at Amsterdam's University Medical Centre developing a novel technique for quantifying organ motion upon MR images using deformable image registration.



O2.3) Sarah Needleman *she/her*

sarah.needleman@ucl.ac.uk
<https://www.ucl.ac.uk/medical-image-computing/> <https://www.linkedin.com/in/sarah-needleman-837293222/>

Online Only



Hello! I'm Sarah, a PhD student on the i4Health CDT at UCL. My research uses pure oxygen as an MR contrast agent to look at lung function.

P1) Elena Grosso she/her
e.grosso@ucl.ac.uk
<https://dangelo.unipv.it>



I am Elena Grosso, a PhD student in Biomedical Sciences at the Department of Brain and Behavioral Sciences of the University of Pavia, Italy. This year I started my PhD on the project “Advanced modeling of magnetic resonance imaging data to study the underpinning of neurological symptoms of long-COVID” under the supervision of professors Claudia Gandini Wheeler-Kingshott and Fulvia Palesi. I am part of the MODEL-COV Project at UCL Queen Square Institute of Neurology, where I am doing a six-months ERASMUS Traineeship from February 2022 to July 2022 to acquire data from long-COVID patients.

P2) Dominic Harrison

d.harrison5@newcastle.ac.uk
<https://www.ncl.ac.uk/medical-sciences/research/institutes/translational/>



Hi, I'm Dom, my work is focussed on developing accelerative scan techniques and applying them to inhaled gas lung imaging. I'm 23, I grew up just outside of Newcastle and studied Physics at undergrad. I discovered my interest in MRI through clinical visits during my 1st year and have been engaged with the Newcastle Magnetic Resonance Centre ever since.

P3) Ross Shaw he/him

Ppys5@nottingham.ac.uk
<https://www.nottingham.ac.uk/research/groups/spmic/index.aspx>

Online Only



Hi, my name is Ross Shaw, and I am a second year PhD student at the Sir Peter Mansfield Imaging Centre at the University of Nottingham. My research involves developing Ultra High Field techniques for investigating microstructure in the brain to gain insight about epileptological lesions.

Online Only

P4) Samuel Rot

samuel.rot.19@ucl.ac.uk
<https://iris.ucl.ac.uk/iris/browse/profile?upi=SR0TX13>

Hello! I'm Sam, a 2nd year PhD student at the Institute of Neurology, UCL. My work revolves around sodium MRI of the brain, with the aim of developing and validating methods to probe brain function. Looking forward to meeting you all!





P5) Elisabeth Pickles she/her

Elisabeth.pickles@eng.ox.ac.uk

<https://deliver.cancer.ox.ac.uk/our-team/Elisabeth-pickles>

Online Only

I'm a Royal Commission for the Exhibition of 1851 Industrial Fellow, doing a DPhil at Oxford University in collaboration with Perspectum (my Industrial partner). I'm in my third year, and my research is on quantitative MRI of liver cancer.

P6) Oliver C. Kiersnowski

o.kiersnowski@ucl.ac.uk

<https://www.ucl.ac.uk/medical-physics-biomedical-engineering/>



Hi everyone, I'm Oliver and I am currently in the 3rd year of a PhD in the MRI Group at University College London on optimising quantitative susceptibility mapping (QSM) methods for neuroimaging. My research has spanned optimising QSM acquisition and post-processing methods, as well as clinical applications. My personal interests include reading, attending the theatre and questionable attempts at drawing and painting.



P7) Nabeelah Jinnah

Nabeelah.jinnah@nottingham.ac.uk

<https://www.nottingham.ac.uk/research/groups/spmic/index.aspx>

Online Only

I am a PhD student based at the Sir Peter Mansfield Imaging Centre (SPMIC) at the University of Nottingham. My research is focusing on magnetization transfer MRI in the abdomen, and I am a member of the gastrointestinal MRI research group at the university.

P8) Emma Thomson she/her

e.thomson.19@ucl.ac.uk

<https://iris.ucl.ac.uk/iris/browse/profile?upi=ELTHO35>



Hello, I am Emma. I am a second year PhD student at UCL's Centre for Medical Image Computing and work on developing an MR fingerprinting sequence for probing the blood brain barrier.



P9) Jannette Nassar
jannette.nassar.20@ucl.ac.uk

Online Only

Hello. I am a second year PhD student from Prof Karin Shmueli's lab at UCL in the department of Medical Physics and Biomedical Engineering. I have a BSc and MSc in Biomedical Engineering from Tel-Aviv University, and the work presented here is part of my PhD project. Besides researching, I spend a lot of time in traffic jams (or at least used to, before I moved to London), exploring the universe (just by reading about it, I wish I could fly to space), and dancing!

P10) Eve Shalom she/her
pyess@leeds.ac.uk

<https://eps.leeds.ac.uk/physics/pgr/6393/eve-shalom>



Hi! I'm a 3rd-year postgraduate researcher at the University of Leeds. My PhD project is based on developing DCE-MRI tracer kinetics recovery methods. In my spare time, I like to get out and about in Leeds and the nearby countryside – you can't beat a Yorkshire pub lunch!



P11) Daniel Cocking he/him
Daniel.cocking@nottingham.ac.uk

<https://www.nottingham.ac.uk/research/beacons-of-excellence/precision-imaging/students-zone/daniel-cocking/index.aspx>

Online Only

I am a 2nd year physics PhD student studying at the university of Nottingham, Sir Peter Mansfield imaging centre (SPMIC). I work on the Philips 7T Achieva Scanner in deuterium metabolic imaging.

Abstracts

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Determining the Effect of 3-ply and KN95 Facemasks on Cerebral Blood Flow and Oxygenation using ASL and QSM	Aisling Fothergill	O1.4	19
sat2TFL: Rapid B1+ Mapping using an Adapted Saturated TurboFLASH Sequence at 7T	James Kent	O1.5	20
Extracting histology stain area fraction for quantitative comparisons with multimodal MRI	Daniel Kor	O2.1	21
Quantification of organ motion during prolonged breath-holding using deformable image registration	Ebony Gunwhy	O2.2	22
Signal Characterisation of Oxygen-Enhanced MRI for Functional Lung Imaging	Sarah Needleman	O2.3	23

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Accounting for Intra-voxel dephasing in the simultaneous measurement of R2 and R2' In a Gradient Echo Sampling of A Spin Echo Sequence at 7T	Ross Shaw	P3	26
Reconstruction and quantification of undersampled brain sodium (23Na) MRI with total generalised variation (TGV) regularisation	Samuel Rot	P4	27
Liver Iron Quantification at 3 T	Elisabeth Pickles	P5	28
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Investigation of Slice Dependent Artifacts in EPI Phase Images	Jannette Nassar	P9	32
A Proof of Concept Study: Towards recovery of spatial kinetic parameters in two compartment systems	Eve Shalom	P10	33
Deuterium brain imaging at 7T during D2O loading	Daniel Cocking	P11	34