Sophie Schauman, DPhil

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Education

2016 – 2020 **Doctoral degree (Doctor of Philosophy, DPhil)** Biomedical Imaging CDT, University of Oxford
Thesis title: Improving Acquisition Speed and Efficiency of Advanced Arterial Spin Labelling MRI
Supervisors: Prof. Peter Jezzard, Dr. Mark Chiew, Dr. Thomas Okell

2013 – 2016 **Undergraduate degree (Bachelor of Science, BSc)** Physics with Medical Physics, University College London
Final year project: Comparison of Different X-ray Imaging Techniques in Breast Cancer
Supervisors: Prof. Robert Speller, Dr. Robert Moss
1st Class Degree and Dean's List Commendee (top 5% in graduating class)

Research Positions

2020 – **Postdoctoral Researcher** in Neurovascular Image Reconstruction
Development of data sampling and image reconstruction methods for accelerated neurovascular imaging. Extensive use of both linear and non-linear numerical optimization methods.

2016 **Summer Project Assistant** at Great Ormond Street Hospital, London, UK
Image segmentation and analysis of MR data using semi-supervised methods.

2015 **Summer Junior Research Scientist** at Nikon Metrology, Tring, UK
R&D on industrial CT systems. Work included performance testing and optimization of new product prototypes.

2014 **Summer Research Assistant** on joint project between University College London (London, UK) and Aalto University (Helsinki, Finland)
Development and testing of Near Infrared Spectroscopy system and phantom. As well as research into photo calibration targets and 3D printing.

Other Experience

Teaching/Demonstrating

2019 Presenter, Advanced MR Physics Lecture Series (Compressed Sensing and Low-Rank Methods)
FMRIB, University of Oxford

2018 – 2020 Demonstrator, MR Physics Graduate Course (Image Formation, Fast Imaging)
FMRIB, University of Oxford

2018, 2019 Demonstrator, Advanced Medical Imaging (Compressed Sensing)
EPSRC-MRC Centre for Doctoral Training in Biomedical Imaging, University of Oxford

2018 Demonstrator, Medical Imaging (GLM and Parallel Imaging)
EPSRC-MRC Centre for Doctoral Training in Biomedical Imaging, University of Oxford

2017 Demonstrator, Introduction to Matlab
EPSRC-MRC Centre for Doctoral Training in Biomedical Imaging, University of Oxford

Public Engagement and Outreach

2019 Public engagement ambassador for the Wellcome Centre for Integrative Neuroimaging
Co-organiser of *SHElock Holmes - The Brain Detective*, a day about neuroimaging for 11-14 year old girls.
Member of developing team of *The Big Brain Roadshow* taking Neuroscience to local schools

2018 – 2019 Magnetic Moments @ ISMRM Annual Meeting
Panellist on 'How to get into public engagement' – 2019
Competition finalist – 2018

2018 – 2019 Presenter and Demonstrator at the UNIQ summer school – University of Oxford Outreach initiative

2018 Public engagement through board games
Developed modified version of *Labyrinth* to showcase different imaging techniques.

Administration

2019 Organising Committee, Advanced MR Physics Lecture Series,
FMRIB, University of Oxford

2018 – 2019 President of Wolfson College Boat Club

Awards & Scholarships

2020 ISMRM Trainee Stipend Award for Workshop on Data Sampling and Image Reconstruction
2019, 2020 Magna Cum Laude Merit Award for abstracts presented at ISMRM Annual Meeting
2018 – 2020 ISMRM Trainee Stipend Award for Annual Meeting
2018, 2019 British and Irish Chapter of ISMRM Student Stipend for Annual Meeting
2018 2nd Best Oral Presentation – British and Irish Chapter of ISMRM Postgraduate Symposium
2018 Public Engagement Prize - University of Oxford, Doctoral Training Centre
2018 Magnetic Moment Finalist - ISMRM Public Engagement Competition
2016 – 2020 Doctoral Studentship funded through EPSRC Doctoral Training Centre
2016 The Dean's List - UCL Undergraduate Award of Excellence
2013 The Jubilee Medal - High School Award for Excellence to Student in Graduating Class

Publications

1. **Schauman S.S.**, Chiew M., Okell T.W. "*Highly Accelerated Vessel-Selective Arterial Spin Labeling Angiography using Sparsity and Smoothness Constraints",* Magn Reson Med 2020;83:892–905 doi: 10.1002/mrm.27979.

In preparation

1. **Schauman S.S.**, Okell T.W., Chiew M. *"The Set Increment with Limited Views Encoding Ratio (SILVER) Method for Optimizing Radial Sampling of Dynamic MRI". Preprint: https://doi.org/10.1101/2020.06.25.171017*

Conference Abstracts (oral presentations)

1. **Schauman S.S.**, Okell T.W., Chiew M. *"Sometimes SILVER is better than gold(en angle radial sampling)"*, 2020 British and Irish Chapter of ISMRM Postgraduate Symposium, Online
2. **Schauman S.S.**, Okell T.W., Chiew M. *"High Resolution 4D vessel selective angiography in under 5 minutes using constrained reconstruction"*, 2020 ISMRM Annual Meeting, Online (Power Pitch) – **Magna Cum Laude**
3. **Schauman S.S.**, Chiew M., Okell T.W. *"Highly Accelerated Dynamic 2D and 3D Vessel-Encoded Arterial Spin Labelling Angiography"*, 2019 ISMRM Annual Meeting, Montreal, Canada – **Magna Cum Laude**
4. **Schauman S.S.**, Chiew M., Okell T.W. *"A Five Minute 4D Vessel-Encoded Arterial Spin Labelling Angiography Scan"*, 2019 British and Irish Chapter of ISMRM Postgraduate Symposium, Birmingham, UK
5. **Schauman S.S.**, Chiew M., Okell T.W. *"Heavily undersampled radial acquisition of dynamic vessel-encoded arterial spin labelling angiograms reconstructed in a compressed sensing framework"*, 2018 British and Irish Chapter of ISMRM Annual Meeting, Oxford, UK
6. **Schauman S.S.**, Chiew M., Okell T.W. *"Vessel-encoding improves compressed sensing reconstruction of arterial spin labelling angiograms"*, 2018 British and Irish Chapter of ISMRM Postgraduate Symposium, London, UK
7. **Schauman S.S.**, Biffi B., Schievano S., Bruse J.L., Arthurs O.J., Sury M.R.J. *"Changes in tracheal shape during gestation"*, 2016 British Journal of Anesthesia Research Forum Winter Meeting, Glasgow, UK

Conference Abstracts (posters)

1. **Schauman S.S.**, Okell T.W., Chiew M. *"Radial sampling interactions in multi-dimensional sparse encoding problems using a joint decoding-reconstruction framework"*, 2020 ISMRM Annual Meeting, Online
2. **Schauman S.S.**, Woods J.G., Chiew M., Okell T.W. *"Highly Accelerated Time-Encoded Dynamic ASL Angiography"*, 2020 ISMRM Annual Meeting, Online
3. **Schauman S.S.**, Okell T.W., Chiew M. *"The SILVER Method: An Improvement upon Radial Golden ratio Sampling Within a Specified Window Size"*, 2020 ISMRM Workshop on Data Sampling and Image Reconstruction, Sedona, USA
4. **Schauman S.S.**, Okell T.W., Chiew M., *"Precision reconstruction of vessel-encoded ASL angiography"*, 2019 British and Irish Chapter of ISMRM Annual Meeting, Sheffield, UK
5. **Schauman S.S.**, Chiew M., Okell T.W. "*4D Vessel-Encoded pCASL Angiography in a Five-Minute Scan*", 2019 University of Michigan Workshop on Arterial Spin Labelling, Ann Arbor, USA
6. **Schauman S.S.**, Chiew M., Okell T.W. "*Accelerated Acquisition of Vessel-Encoded Arterial Spin Labelling Angiograms with Compressed Sensing*", 2018 ISMRM-ESMRMB Joint Annual Meeting, Paris, France

Conference Abstracts (presented by others)

1. Woods J.G., **Schauman S.S.**, Chiew M., Chappell M.A., Okell T.W. *"Optimization of time-encoded pseudo-continuous ASL angiography with a variable flip-angle scheme"*, 2019 ISMRM Annual Meeting, Montreal, Canada – **Magna Cum Laude**