

Curriculum Vitae

Thomas Okell

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CONTACT DETAILS

Address: Wellcome Centre for Integrative Neuroimaging (FMRIB),
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EDUCATION AND QUALIFICATIONS

2007 – 2011 University of Oxford (Doctoral Degree)
Doctor of Philosophy (DPhil) in MRI Physics

2005 – 2007 University of Birmingham (Masters Degree)
MSc in Medical and Radiation Physics (with distinction)

2001 – 2005 University of Cambridge (Undergraduate Degree)
MSci Natural Sciences (1st class honours)

ACADEMIC POSITIONS

Jun 2020 – present University of Oxford (NDCN/WIN/FMRIB)
Associate Professor and Wellcome/Royal Society Sir Henry Dale Fellow

Mar 2015 – Jun 2020 University of Oxford (NDCN/WIN/FMRIB)
University Research Lecturer and Royal Academy of Engineering
Research Fellow

Jan 2011 – Feb 2015 University of Oxford (WIN/FMRIB Centre)
Postdoctoral MR Physicist

Summer 2005 University of Cambridge (Cognition and Brain Sciences Unit)
Graduate Research Assistant

OTHER POSITIONS

Mar 2019 – Present SBGNeuro
Consultant

Dec 2013 – Jan 2014 Oxford University Consulting
Consultant MR Physicist

Sep 2005 – Jan 2010 National Health Service (Churchill Hospital, Oxford)
Trainee Medical Physicist

AWARDS

- Associate Professor Title (03/2021)
 - WIN Good Citizen Award (12/2019)
 - British Chapter of the ISMRM Sir Peter Mansfield Prize (09/2016)
 - University Research Lecturer Title (06/2016)
 - International Society for Magnetic Resonance in Medicine (ISMRM) Junior Fellow (05/2016)
 - Nuffield Department of Clinical Neurosciences Award for Excellence (04/2015)
 - MRM Distinguished Reviewer Award (2013-2015,2017-18)
 - ISMRM Young Investigator (I. I. Rabi) Award Finalist (05/2012)
 - ISMRM “Summa Cum Laude” Merit Award (2012, 2014, 2015-2017)
 - ISMRM “Magna Cum Laude” Merit Award (2012, 2013)
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GRANTS

- Wellcome/Royal Society Sir Henry Dale Fellowship (15/06/2020-14/06/2025): “Highly sensitive brain blood flow measurements using ultra-high field magnetic resonance imaging”. **Okell TW**. £1.0m (220204/Z/20/Z).
 - Wellcome Centre for Integrative Neuroimaging Seed Grant (01/03/2019-31/03/2020): “Advanced Brain Blood Flow Measurements with 7T MRI”. **Okell TW**, Chiew M. £9k.
 - Oxford University Press John Fell Fund (03/01/2019- 31/03/2020): “Non-invasive Assessment of White Matter Perfusion using Ultra High Field Magnetic Resonance Imaging”. **Okell TW**. £6.75k (0006186).
 - Royal Academy of Engineering Research Fellowship (1/3/2015-29/2/2020): “A Unified Approach for Non-Invasive Assessment of Brain Blood Supply”. **Okell TW**. £580k (RF/132)
 - British Heart Foundation Project Grant (1/1/2018 – 31/12/2020): “Adult preterm cerebrovascular phenotype and influence of cardiovascular fitness”. Leeson P, Betts J, Williamson W, Lewandowski A, **Okell TW**. £297k (PG/17/13/32860)
 - Engineering and Physical Sciences Research Council Project Grant (1/5/2017 –31/10/2020): “Controlling structure induced variations in non-invasive perfusion MRI of neurodegeneration”. Chappell MA, **Okell TW**, Mackay CE, Jenkinson M. £821k (EP/P012361/1)
 - Medical Research Council Studentship (2007-2011): “Assessment of Collateral Blood Flow in the Brain using Magnetic Resonance Imaging”, **Okell TW**, £29k
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TEACHING, SUPERVISION AND PUBLIC ENGAGEMENT

Teaching

FMRIB Graduate Program:

Director (2019-present), Director of Physics Education (2014-2019), Lecturer (2010-present), Physics Head Tutor (2009), Tutor (2008, 2011-present)

FMRIB Advanced Graduate Program (Physics Module):

Organiser (2014-2018), Lecturer (2010-2011,2014,2016,2017,2022)

Oxford-Nottingham Centre for Doctoral Training in Biomedical Imaging:

Lecturer (2014-2017)

University of Oxford Centre for Doctoral Training in Healthcare Innovation:

Lecturer (2013,2014)

University of Oxford Physics Undergraduate Degree:

Medical Physics Option Tutor (2009)

FMRIB Pulse Sequence Programming Seminars:

Seminar leader (2009,2024)

Supervision

Doctoral (DPhil) Projects, Oxford:

- Hao Li, "Highly Accelerated Magnetic Resonance Angiography using Deep Learning", (primary co-supervisor, 2023-present), an iCase project co-funded by the MRC DTP and Siemens Healthineers
- Minhao Hu, "Improving the Robustness of Non-Invasive Perfusion Imaging", (primary co-supervisor, 2023-present), funded by a Jardine Foundation Postgraduate Scholarship Award
- Ben Keedwell, "Development of Methods to Assess Intracranial Vessel Stiffness as a Measure of Vascular Disease", (secondary co-supervisor, 2023-present), an iCase project co-funded by the MRC DTP and Siemens Healthineers
- Qijia Shen, "Advanced trajectories for combined angiography and perfusion imaging using arterial spin labelling", (primary co-supervisor, 2021-present).
- Sophie Schauman, "Accelerated vessel-selective cerebral blood flow imaging using MRI", (primary co-supervisor, 2017-2020, funded by the EPSRC via the ONBI CDT)
- Joseph Woods, "Time-efficient methods for non-invasive brain blood flow imaging using arterial spin labelling MRI", (primary co-supervisor, 2015-2019, funded by the EPSRC via the ONBI CDT)
- Caitlin O'Brien, "Measurement of Localized Oxygen Extraction Fraction in Brain using Magnetic Resonance Imaging" (co-supervisor, 2016-2019, funded by the EPSRC via the ONBI CDT)
- Flora Kennedy-McConnell, "Quantifying collateral flow pathways in the brain" (co-supervisor, 2013-2017, funded by the RCUK Digital Economy Programme)
- Eleanor Berry, "Optimisation of Vessel-Encoded Dynamic Angiography with Arterial Spin Labelling", (primary co-supervisor, 2012-2016, funded by the EPSRC)

Doctoral (PhD) Projects, outside Oxford:

- Yuriko Suzuki, "From the Macro- to the Microvasculature: Temporal and Spatial Visualization using Arterial Spin Labeling" (co-promoter, 2016-2018, based at LUMC, the Netherlands, funded by the EU under the Horizon2020 program project: CDS-QUAMRI, project number 634541)

Visiting PhD Projects:

- Hongwei Li, "Vessel-selective Arterial Spin Labelling at Ultra-High Field" (host primary supervisor, 2022-23, based at Fudan University, China)
- Xinyi Xu, "UK biobank age prediction and genetic associations using perfusion imaging data", (host primary supervisor, 2023-24, based at Zhejiang University, China).

Masters (MPhys) Projects:

- Robert Mitchell, "Assessment of Compressed Sensing Methods in Speeding up Magnetic Resonance Angiography Data Acquisition" (primary co-supervisor, 2011)

Visiting Masters Projects:

- Julie Ceulemans, "Influence of hormonal anticonception on brain perfusion" (co-promoter, 2023-24, based at Ghent University, Belgium)

Public Engagement

Wellcome Centre for Integrative Neuroimaging, Oxford:

Took part in the "researcher café" at the WINdow on the brain event, discussing brain blood flow with members of the public (2017, 2022)

Took part in scanning a reporter from the New Yorker (2017) and a podcast presenter (2017)

Brainfest, Oxford:

Provided images of vessel-selective perfusion and angiography for exhibition (2017)

Science Museum, London:

Advised on the "future of brain imaging" exhibit (2016)

St. Michael's Primary School, Oxford:

Assisted in teaching for Brain Awareness Week (2011)

A-level/GCSE Student Work Experience Placements:

Organised 1-2 day placements for work experience students with associated risk assessments (2011-2012, 2022)

NHS Medical Physics MRI Acquaintanceships:

Organised placements for NHS medical physics trainees (2008, 2013)

Bodleian Library, Oxford:

Provided in-vivo videos of blood flow around the circle of Willis for the “Oxford Medical Firsts” exhibition (2013) and the “Thinking 3D” exhibition (2019).

Museum of the History of Science, Oxford

Provided images and videos of the circle of Willis for an exhibition as part of Brain Awareness Week (2013)

PROFESSIONAL ACTIVITIES

University of Oxford

- WIN clinical focus (stroke) champion for 2018-19
- Member of the Nuffield Department of Clinical Neurosciences (NDCN) Staff Development Committee (2017-2022)
- Member of the Athena Swan panel for NDCN, focussing on the fair representation of women in science (2012-2013)
- Member of the Clinical Neurosciences Society committee, which promotes educational, developmental and social events within NDCN (2014-2017)
- Shortlister and interviewer for NDCN graduate admissions (2021-present)
- Interviewer and assessor for the Oxford-Nottingham Biomedical Imaging Centre for Doctoral Training (2015-2019)
- Interviewer for postdoctoral posts within NDCN and Engineering (2011-present)

Frontiers in Neuroimaging

- Associate Editor (2023-present)

International Society for Magnetic Resonance in Medicine (ISMRM)

- Member of the perfusion study group workshop organising committee (2023-25)
- Member of the Annual Meeting Programme Committee (2017-2020)
- Junior Fellow (2016)
- Web Editorial Board member (2016-17)
- Educational session organiser (2017,2019)
- Virtual journal club panel member (2013)
- Member of the perfusion study group (2009 – present), high-field study group (2021-present) and British and Irish Chapter (2012-present)

BIDS

- Contributor to the ASL Brain Imaging Data Structure (BIDS) extension initiative (2018 – present)

UK Biobank

- Adviser on image quality and an Arterial Spin Labelling (ASL) protocol to be added to the study, including protocol optimisation and the assessment of pilot data (2014 – present)

Human Connectome Project

- Adviser on Arterial Spin Labelling (ASL) protocol design and image analysis (2016)

Reviewing

- Reviewer for the international journals *Magnetic Resonance in Medicine* (2011-present), *Neuroimage* (2018-2023), the *Journal of Cerebral Blood Flow & Metabolism* (2014-present), *eLife* (2018, acting as guest editor), *IEEE Transactions on Biomedical Engineering* (2016-present) and *IEEE Transactions on Medical Imaging* (2024-present) and abstract reviewer for the ISMRM annual meeting (2013,2017-2019)

PATENTS

- P1. Schauman SS, Chiew M and **Okell TW**. Methods and systems for optimizing sampling efficiency of dynamically sampled magnetic resonance imaging (MRI). *US Patent Application 63/12,862*. Nov 2020;
- P2. **Okell TW**. Combined angiography and perfusion using radial imaging and arterial spin labeling. *US Patent Application 62/325,361*. April 2016;
- P3. Berry ESK, **Okell TW**, and Jezzard P. Off-resonance Correction for Pseudo-continuous Arterial Spin Labeling. *US Patent Application 62/178,418*. April 2015;
- P4. Kennedy McConnell FA, Payne SJ, Chappell MA, and **Okell TW**. Estimation of blood flow rates. *US Patent 10,512,416 B2*. December 2019;
- P5. Chappell MA, Woolrich MW, and **Okell TW**. Fast analysis method for non-invasive imaging of blood flow using vessel-encoded arterial spin labelling. *US Patent 9,757,047*. Sep. 2017; *Exclusive license granted to Siemens Healthcare (Erlangen, Germany)*.
- P6. **Okell TW**, Chappell MA, and Jezzard P. Quantification of blood volume flow rates from dynamic angiography data. *US Patent 9,501,620*. Nov. 2016; *Exclusive license granted to Siemens Healthcare (Erlangen, Germany)*.

BOOK CHAPTERS

- B1. Chappell M, MacIntosh B, **Okell TW**. *Introduction to Perfusion Quantification using Arterial Spin Labelling*. Oxford University Press, 2017 doi:10.1093/oso/9780198793816.001.0001.
- B2. Chappell M, **Okell TW**, Jenkinson M. *Short Introduction to MRI Physics for Neuroimaging*. 2017. http://www.fmrib.ox.ac.uk/primers/appendices/mri_physics.pdf
- B3. **Okell TW**, Hattingen E, Klein JC, Miller KL. Magnetic Resonance Imaging (MRI) Methods. In: *Diseases of the Spinal Cord*. Springer Berlin Heidelberg: Berlin, Heidelberg, 2015, pp 39–84.
- B4. **Okell TW**, Hattingen E, Klein JC, Miller KL. Advanced MRI Methods. In: *Diseases of the Spinal Cord*. Springer Berlin Heidelberg: Berlin, Heidelberg, 2015, pp 85–91.

JOURNAL ARTICLES

Preprints

- J1. Woods JG, Ji Y, Li H, Hess AT, **Okell TW**. SNR-Efficient Whole-Brain Pseudo-Continuous Arterial Spin Labeling Perfusion Imaging at 7 Tesla. *bioRxiv* 2024. doi:10.1101/2024.11.12.623276.
- J2. Shen Q, Wu W, Chiew M, Ji Y, Woods JG, **Okell TW**. Motion correction with subspace-based self-navigation for combined angiography, perfusion and structural imaging. *bioRxiv* 2024. doi:10.1101/2024.08.26.609650.
- J3. Schauman SS, **Okell TW**, Chiew M. The Set Increment with Limited Views Encoding Ratio (SILVER) Method for Optimizing Radial Sampling of Dynamic MRI. *bioRxiv* 2020. doi:10.1101/2020.06.25.171017.

In Press

- J4. Shen Q, Wu W, Chiew M, Ji Y, Woods JG, **Okell TW**. Ultra-high temporal resolution 4D angiography using arterial spin labeling with subspace reconstruction. *Magnetic Resonance in Med.* 2024. doi:10.1002/mrm.30407
- J5. Ji Y, Woods JG, Li H, **Okell TW**. Dynamic B₀ field shimming for improving pseudo-continuous arterial spin labeling at 7 T. *Magnetic Resonance in Med.* 2024. doi:10.1002/mrm.30387.

Published

- J6. Ezra M, Franko E, Spronk DB, Lamb C, **Okell TW**, Pattinson KTs. Trial of the cerebral perfusion response to sodium nitrite infusion in patients with acute subarachnoid haemorrhage using arterial spin labelling MRI. *Nitric Oxide.* 2024; 153: 50–60.
- J7. Suzuki Y, Koktzoglou I, Li Z, Jezzard P, **Okell TW**. Improved visualization of intracranial distal arteries with multiple 2D slice dynamic ASL - MRA and super-resolution convolutional neural network. *Magnetic Resonance in Med.* 2024; 92: 2491–2505.
- J8. Shen Q, Wu W, Chiew M, Ji Y, Woods JG, **Okell TW**. Efficient 3D cone trajectory design for improved combined angiographic and perfusion imaging using arterial spin labeling. *Magnetic Resonance in Med.* 2024; 92: 1568–1583.
- J9. Ji Y, Wu W, De Buck MHS, **Okell TW**, Jezzard P. Highly accelerated intracranial time-of-flight magnetic resonance angiography using wave-encoding. *Magnetic Resonance in Med.* 2023; 90: 432–443.
- J10. Chappell MA, Kirk TF, Craig MS, McConnell FAK, Zhao MY, MacIntosh BJ, **Okell TW**, Woolrich MW. BASIL: A toolbox for perfusion quantification using arterial spin labelling. *Imaging Neuroscience.* 2023; 1: 1–16.
- J11. Woods JG, Achten E, Asllani I, Bolar DS, Dai W, Detre JA, Fan AP, Fernández-Seara MA, Golay X, Günther M, Guo J, Hernandez-Garcia L, Ho M, Juttukonda MR, Lu H, MacIntosh BJ, Madhuranthakam AJ, Mutsaerts H, **Okell TW**, Parkes LM, Pinter N, Pinto J, Qin Q, Smits M, Suzuki Y, Thomas DL, Van Osch MJP, Wang DJJ, Warnert EAH, Zaharchuk G, Zelaya F, Zhao M, Chappell MA, the ISMRM Perfusion Study Group. Recommendations for quantitative cerebral perfusion MRI using multi-timepoint arterial spin labeling: Acquisition, quantification, and clinical applications. *Magnetic Resonance in Med.* 2024; 92: 469–495.

- J12. Poldrack RA, Markiewicz CJ, Appelhoff S, Ashar YK, Auer T, Baillet S, Bansal S, Beltrachini L, Benar CG, Bertazzoli G, Bhogawar S, Blair RW, Bortoletto M, Boudreau M, Brooks TL, Calhoun VD, Castelli FM, Clement P, Cohen AL, Cohen-Adad J, D'Ambrosio S, De Hollander G, De La Iglesia-Vayá M, De La Vega A, Delorme A, Devinsky O, Draschkow D, Duff EP, DuPre E, Earl E, Esteban O, Feingold FW, Flandin G, Galassi A, Gallitto G, Ganz M, Gau R, Gholam J, Ghosh SS, Giacomel A, Gillman AG, Gleeson P, Gramfort A, Guay S, Guidali G, Halchenko YO, Handwerker DA, Hardcastle N, Herholz P, Hermes D, Honey CJ, Innis RB, Ioanas H-I, Jahn A, Karakuzu A, Keator DB, Kiar G, Kincses B, Laird AR, Lau JC, Lazari A, Legarreta JH, Li A, Li X, Love BC, Lu H, Marcantoni E, Maumet C, Mazzamuto G, Meisler SL, Mikkelsen M, Mutsaerts H, Nichols TE, Nikolaidis A, Nilsonne G, Niso G, Norgaard M, **Okell TW**, Oostenveld R, Ort E, Park PJ, Pawlik M, Pernet CR, Pestilli F, Petr J, Phillips C, Poline J-B, Pollonini L, Raamana PR, Ritter P, Rizzo G, Robbins KA, Rockhill AP, Rogers C, Rokem A, Rorden C, Routier A, Saborit-Torres JM, Salo T, Schirner M, Smith RE, Spisak T, Sprenger J, Swann NC, Szinte M, Takerkart S, Thirion B, Thomas AG, Torabian S, Varoquaux G, Voytek B, Welzel J, Wilson M, Yarkoni T, Gorgolewski KJ. The past, present, and future of the brain imaging data structure (BIDS). *Imaging Neuroscience*. 2024; 2: 1–19. doi: 10.1162/imag_a_00103
- J13. Tandler BC, Welland M, Miller KL, The WIN Handbook Team*. Research Culture: Why every lab needs a handbook. *eLife*. 2023; 12: e88853. *Including **Okell TW**
- J14. **Okell TW**, Chiew M. Optimization of 4D combined angiography and perfusion using radial imaging and arterial spin labeling. *Magnetic Resonance in Med*. 2023; 89: 1853–1870.
- J15. Woods JG, Schauman SS, Chiew M, Chappell MA, **Okell TW**. Time-encoded pseudo-continuous arterial spin labeling: Increasing SNR in ASL dynamic angiography. *Magnetic Resonance in Med*. 2023; 89: 1323–1341.
- J16. Lapidaire W, Forkert ND, Williamson W, Huckstep O, Tan CM, Alsharqi M, Mohamed A, Kitt J, Burchert H, Mouches P, Dawes H, Foster C, **Okell TW**, Lewandowski AJ, Leeson P. Aerobic exercise increases brain vessel lumen size and blood flow in young adults with elevated blood pressure. Secondary analysis of the TEPHRA randomized clinical trial. *NeuroImage: Clinical*. 2023; 37: 103337.
- J17. Msayib Y, Harston GWJ, Ray KJ, Larkin JR, Sutherland BA, Sheerin F, Blockley NP, **Okell TW**, Jezzard P, Baldwin A, Sibson NR, Kennedy J, Chappell MA. Quantitative chemical exchange saturation transfer imaging of nuclear overhauser effects in acute ischemic stroke. *Magnetic Resonance in Med*. 2022; 88: 341–356.
- J18. Duff E, Zelaya F, Almagro FA, Miller KL, Martin N, Nichols TE, Taschler B, Griffanti L, Arthofer C, Douaud G, Wang C, **Okell TW**, Bethlehem RAI, Eickel K, Günther M, Menon DK, Williams G, Facer B, Lythgoe DJ, Dell'Acqua F, Wood GK, Williams SCR, Houston G, Keller SS, Holden C, Hartmann M, George L, Breen G, Michael BD, Jezzard P, Smith SM, Bullmore ET, on behalf of the COVID-CNS Consortium. Reliability of multi-site UK Biobank MRI brain phenotypes for the assessment of neuropsychiatric complications of SARS-CoV-2 infection: The COVID-CNS travelling heads study. *PLoS ONE*. 2022; 17: e0273704.
- J19. Hernandez-Garcia L, Aramendía-Vidaurreta V, Bolar DS, Dai W, Fernández-Seara MA, Guo J, Madhuranthakam AJ, Mutsaerts H, Petr J, Qin Q, Schollenberger J, Suzuki Y, Taso M, Thomas DL, van Osch MJP, Woods J, Zhao MY, Yan L, Wang Z, Zhao L, **Okell TW**. Recent Technical Developments in ASL: A Review of the State of the Art. *Magnetic Resonance in Med*. 2022; 88: 2021–2042.

- J20. Clement P, Castellaro M, **Okell TW**, Thomas DL, Vandemaele P, Elgayar S, Oliver-Taylor A, Kirk T, Woods JG, Vos SB, Kuijter JPA, Achten E, van Osch MJP, BIDS maintainers, Appelhoff S, Blair R, Feingold F, Gau R, Markiewicz CJ, Salo T, Detre JA, Lu H, Alsop DC, Chappell MA, Hernandez-Garcia L, Petr J, Mutsaerts HJMM. ASL-BIDS, the brain imaging data structure extension for arterial spin labeling. *Sci Data*. 2022; 9: 543.
- J21. Griffanti L, Raman B, Alfaro-Almagro F, Filippini N, Cassar MP, Sheerin F, **Okell TW**, Kennedy McConnell FA, Chappell MA, Wang C, Arthofer C, Lange FJ, Andersson J, Mackay CE, Tunnicliffe EM, Rowland M, Neubauer S, Miller KL *et al*. Adapting the UK Biobank Brain Imaging Protocol and Analysis Pipeline for the C-MORE Multi-Organ Study of COVID-19 Survivors. *Front Neurol* 2021; 12: 753284.
- J22. Zhang LX, Woods JG, **Okell TW**, Chappell MA. Examination of optimized protocols for pCASL: Sensitivity to macrovascular contamination, flow dispersion, and prolonged arterial transit time. *Magn Reson Med* 2021; 86: 2208–2219.
- J23. Paret C, Niedtfeld I, Lotter T, Wunder A, Grimm S, Mennes M, **Okell TW**, Beckmann C, Schmahl C. Single-Dose Effects of Citalopram on Neural Responses to Affective Stimuli in Borderline Personality Disorder: A Randomized Clinical Trial. *Biol Psychiatry Cogn Neurosci Neuroimaging* 2021; 6: 837–845.
- J24. van der Plas MCE, Schmid S, Versluis MJ, **Okell TW**, Osch MJP. Time-encoded golden angle radial arterial spin labeling: Simultaneous acquisition of angiography and perfusion data. *NMR Biomed* 2021; 34: e4519.
- J25. Suri S, Bulte D, Chiesa ST, Ebmeier KP, Jezzard P, Rieger SW, Pitt JE, Griffanti L, **Okell TW**, Craig M, Chappell MA, Blockley NP, Kivimäki M, Singh-Manoux A, Khir AW, Hughes AD, Deanfield JE, Jensen DEA *et al*. Study Protocol: The Heart and Brain Study. *Front Physiol* 2021; 12: 1–19.
- J26. Woods JG, Chappell MA, **Okell TW**. Designing and comparing optimized pseudo-continuous Arterial Spin Labeling protocols for measurement of cerebral blood flow. *Neuroimage* 2020; 223: 117246.
- J27. Germuska M, Chandler HL, **Okell TW**, Fasano F, Tomassini V, Murphy K, Wise RG. A Frequency-Domain Machine Learning Method for Dual-Calibrated fMRI Mapping of Oxygen Extraction Fraction (OEF) and Cerebral Metabolic Rate of Oxygen Consumption (CMRO₂). *Front Artif Intell* 2020; 3: 12.
- J28. Raman B, Cassar MP, Tunnicliffe EM, Filippini N, Griffanti L, Alfaro-Almagro F, **Okell TW**, Sheerin F, Xie C, Mahmood M, Mózes FE, Lewandowski AJ, Ohuma EO, Holdsworth D, Lamlum H, Woodman MJ, Krasopoulos C, Mills R *et al*. Medium-term effects of SARS-CoV-2 infection on multiple vital organs, exercise capacity, cognition, quality of life and mental health, post-hospital discharge. *EClinicalMedicine* 2021; 31: 100683.
- J29. Tong Y, Jezzard P, **Okell TW**, Clarke WT. Improving PCASL at ultra-high field using a VERSE-guided parallel transmission strategy. *Magn Reson Med* 2020; 84: 777–786.
- J30. Pinto J, Chappell MA, **Okell TW**, Mezue M, Segerdahl AR, Tracey I, Vilela P, Figueiredo P. Calibration of arterial spin labeling data—potential pitfalls in post-processing. *Magn Reson Med* 2020; 83: 1222–1234.
- J31. Schauman SS, Chiew M, **Okell TW**. Highly accelerated vessel-selective arterial spin labeling angiography using sparsity and smoothness constraints. *Magn Reson Med* 2020; 83: 892–905.

- J32. Msayib Y, Craig M, Simard MA, Larkin JR, Shin DD, Liu TT, Sibson NR, **Okell TW**, Chappell MA. Robust estimation of quantitative perfusion from multi-phase pseudo-continuous arterial spin labeling. *Magn Reson Med* 2020; 83: 815–829.
- J33. Berry ESK, Jezzard P, **Okell TW**. The advantages of radial trajectories for vessel-selective dynamic angiography with arterial spin labeling. *Magn Reson Mater Physics, Biol Med* 2019; 32: 643–653.
- J34. Carone D, Harston GWJ, Garrard J, De Angeli F, Griffanti L, **Okell TW**, Chappell MA, Kennedy J. ICA-based denoising for ASL perfusion imaging. *Neuroimage* 2019; 200: 363–372.
- J35. Phellan R, Lindner T, Helle M, Falcão AX, **Okell TW**, Forkert ND. A methodology for generating four-dimensional arterial spin labeling MR angiography virtual phantoms. *Med Image Anal* 2019; 56: 184–192.
- J36. Msayib Y, Harston GWJ, Sheerin F, Blockley NP, **Okell TW**, Jezzard P, Kennedy J, Chappell MA. Partial volume correction for quantitative CEST imaging of acute ischemic stroke. *Magn Reson Med* 2019; 82: 1920–1928.
- J37. O'Brien C, **Okell TW**, Chiew M, Jezzard P. Volume-localized measurement of oxygen extraction fraction in the brain using MRI. *Magn Reson Med* 2019; 82: 1412–1423.
- J38. Larkin JR, Simard MA, Khrapitchev AA, Meakin JA, **Okell TW**, Craig M, Ray KJ, Jezzard P, Chappell MA, Sibson NR. Quantitative blood flow measurement in rat brain with multiphase arterial spin labelling magnetic resonance imaging. *J Cereb Blood Flow Metab* 2019; 39: 1557–1569.
- J39. Suri S, Topiwala A, Chappell MA, **Okell TW**, Zsoldos E, Singh-Manoux A, Kivimäki M, Mackay CE, Ebmeier KP. Association of Midlife Cardiovascular Risk Profiles With Cerebral Perfusion at Older Ages. *JAMA Netw Open* 2019; 2: e195776.
- J40. Berry ESK, Jezzard P, **Okell TW**. Off-resonance correction for pseudo-continuous arterial spin labeling using the optimized encoding scheme. *Neuroimage* 2019; 199: 304–312.
- J41. **Okell TW***, Harston GWJ*, Chappell MA, Sheerin F, Kennedy J, Jezzard P. Measurement of collateral perfusion in acute stroke: a vessel-encoded arterial spin labeling study. *Sci Rep* 2019; 9: 8181. *Joint first authorship.
- J42. Msayib Y, Harston GWJ, Tee YK, Sheerin F, Blockley NP, **Okell TW**, Jezzard P, Kennedy J, Chappell MA. Quantitative CEST imaging of amide proton transfer in acute ischaemic stroke. *NeuroImage Clin* 2019; 23: 101833.
- J43. Stone AJ, Harston GWJ, Carone D, **Okell TW**, Kennedy J, Blockley NP. Prospects for investigating brain oxygenation in acute stroke: Experience with a non-contrast quantitative BOLD based approach. *Hum Brain Mapp* 2019; 40: 2853–2866.
- J44. Woods JG, Chappell MA, **Okell TW**. A general framework for optimizing arterial spin labeling MRI experiments. *Magn Reson Med* 2019; 81: 2474–2488.
- J45. Suzuki Y, **Okell TW**, Fujima N, van Osch MJP. Acceleration of vessel-selective dynamic MR Angiography by pseudocontinuous arterial spin labeling in combination with Acquisition of ConTRol and labEled images in the Same Shot (ACTRESS). *Magn Reson Med* 2019; 81: 2995–3006.

- J46. Suzuki Y, van Osch MJP, Fujima N, **Okell TW**. Optimization of the spatial modulation function of vessel-encoded pseudo-continuous arterial spin labeling and its application to dynamic angiography. *Magn Reson Med* 2019; 81: 410–423.
- J47. **Okell TW**, Garcia M, Chappell MA, Byrne JV, Jezzard P. Visualizing artery-specific blood flow patterns above the circle of Willis with vessel-encoded arterial spin labeling. *Magn Reson Med* 2019; 81: 1595–1604.
- J48. **Okell TW**. Combined angiography and perfusion using radial imaging and arterial spin labeling. *Magn Reson Med* 2019; 81: 182–194.
- J49. Suzuki Y, **Okell TW**, Chappell MA, van Osch MJP. A framework for motion correction of background suppressed arterial spin labeling perfusion images acquired with simultaneous multi-slice EPI. *Magn Reson Med* 2019; 81: 1553–1565.
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