

# KARLA MILLER

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## APPOINTMENTS

- 2011–2016 Wellcome Trust Career Development Fellow  
FMRIB Centre, Clinical Neurology, University of Oxford
- 2007–Present University Research Lecturer  
Clinical Neurology, University of Oxford
- 2006–2011 Royal Academy of Engineering / EPSRC Research Fellow  
FMRIB Centre, Clinical Neurology, University of Oxford
- 2004–2006 Post-doctoral Researcher  
FMRIB Centre, Clinical Neurology, University of Oxford
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## EDUCATION

- 2004 Doctor of Philosophy (PhD)  
Electrical Engineering, Stanford University  
*Thesis:* Novel methods for steady-state neuroimaging  
*Advisor:* Prof. John M. Pauly
- 2000 Master of Science  
Electrical Engineering, Stanford University
- 1998 Bachelor of Science (with highest honors)  
Computer Science, University of Illinois Urbana-Champaign
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## AWARDS AND PROFESSIONAL ACTIVITIES

### Memberships and Committees

- Member: *Editorial Board*, Magnetic Resonance in Medicine, 2012–2014
- Member: *Board of Trustees*, ISMRM, 2011–2013
- Vice-Chair/Chair: *Young Investigator Award Sub-committee*, ISMRM, 2011–2012
- Member: *Editorial Board*, NeuroImage, 2011–2013
- Member: *FMRIB Strategy Committee*, Oxford, 2011–Present
- Member: *Annual Meeting Program Committee*, ISMRM, 2010–2012 (*FMRI Chair*, 2011–2012)
- Member: *Biobank Imaging Enhancement Working Group*, UK Biobank, 2011–Present
- Consultant: *Human Connectome Project*, NIH-Funded Consortium, 2010–2014
- Secretary: *Current Issues in Brain Function Study Group*, ISMRM, 2009–2010
- Secretary: *Diffusion-Perfusion Study Group*, ISMRM, 2008–2009
- Member: *Int'l Soc Magnetic Resonance in Medicine (ISMRM)*, *Org Human Brain Mapping (OHBM)*

## Professional Activities

- Co-Organizer: *ISMRM Educational Courses (2 courses)*, Melbourne, 2012
- Organizer: *OHBM Morning Workshop: Susceptibility Imaging*, Quebec City, 2011
- Co-Organizer: *ISMRM Educational Courses (3 courses)*, Montreal, 2011
- Organizer: *ESMRMB Lectures on MRI: Diffusion Imaging (3-day course)*, Oxford, 2010
- Organizer: *UK Diffusion MRI Interest Group (day workshop)*, Oxford, 2007
- Session Chair: *ISMRM* 2006, 2007, 2008, 2011, 2012; *Gordon Conf* 2008, 2010; *OHBM* 2011; *BC-ISMRM* 2006; *NMR Symp* 2007; *Ox Imag Fest* 2011
- Journal Reviewer: *Magn Reson Med*, *NeuroImage*, *Human Brain Mapping*, *J Mag Reson Imag*, *J Magn Reson*, *J Cereb Blood Flow Metab*, *NMR Biomed*, *IEEE Trans Biomed Eng*
- Grant Reviewer: *Wellcome Trust*, *Swiss National Science Foundation*, *National Research Council Canada*

## Awards

- Research Fellowship (Non-Stipendiary), Worcester College, Oxford, 2006–2010
- Departmental Merit Award, Clinical Neurology, Oxford 2007
- PEO Scholar Award (Visiting Research Assistant at Oxford), 2001–2002
- Stanford Graduate Fellowship (Full Scholarship), 1998–2002
- Computing Research Association Outstanding Undergraduate Award (1 of 2 nationally), 1998
- Hohn-Nash Award for Scientific Computing, Dept. of Computer Science, UIUC, 1998
- Spyglass Award for Academic Achievement, Dept. of Computer Science, UIUC, 1997

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## TEACHING AND MENTORSHIP

### Teaching

- *FMRI Graduate Program: Physics Course*, Director & Principal Lecturer, 2006–Present.
- *ISMRM Weekend Educational Courses: Various Topics*, 2008–Present.
- *FSL Course: Physics of MRI, FMRI and Diffusion MRI*, 2008–Present.
- *ESMRMB Diffusion Course*, University of Oxford, 2010.
- *Institute of Biomedical Engineering Doctoral Training Centre*, University of Oxford, 2010–11.
- *EPIC (GE) Sequence Programing*, Designed/Taught Course, Stanford University, 2004.
- *Medical Imaging II: Electrical Engineering*, Teaching Assistant, Stanford University, 2001.

### Supervision

- *Kirsten Hughes*, MPhys Student, University of Oxford, 2012.
- *Sean Foxley*, Post-doctoral Researcher, University of Oxford, 2011–Present.
- *Wilfred Lam*, DPhil Student, University of Oxford, 2010–Present.
- *Way Cherng Chen*, DPhil Student, University of Oxford and A\*STAR Singapore, 2009–Present.
- *Robert Frost (with Prof. P. Jezzard)*, DPhil Student, University of Oxford, 2008–Present.
- *Rob (HN) Tijssen*, DPhil Student, University of Oxford, 2007–2011.
- *Daniel Gallichan*, Post-doctoral Researcher, University of Oxford, 2007–2008.
- *Jennifer McNab*, DPhil Student and Post-doctoral Researcher, University of Oxford, 2005–2009.

### Theses Examined

- *Pieter Buur*, PhD, Radboud University, Nijmegen, 2011.
- *Tom Okell*, DPhil Transfer, University of Oxford, 2009.
- *Kyle Pattinson*, DPhil, University of Oxford, 2008.
- *Julien Cohen-Adad*, PhD, University of Montreal and Ecole Centrale Paris, 2008.

## Public Engagement Lectures

- *Physics on the brain*, Chippewa Falls PEO, 2011.
  - *My career in brain imaging*, Chippewa Falls High School, 2011.
  - *Diffusion imaging of post-mortem human brains*, Brain Bank for Autism, Oxford, 2010.
  - *Wonderful protons: Revealing the brain's secrets with MRI*, Royal Academy of Engineering, 2009.
  - *MRI: A window into the working brain*, Royal Academy of Engineering, 2007.
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## GRANTS AND FUNDING

- 2/2012–1/2015 *Advanced fMRI acquisition, reconstruction and signal processing for dynamic brain network imaging*  
EPSRC, PI: Miller, £556,000  
Role: Principal Investigator
- 12/2011–6/2013 *Measurement of spontaneous low-frequency oscillations of cerebral haemodynamics*  
National Institute for Academic Anaesthesia, PI: Pattinson, £14,000  
Role: Co-Investigator
- 3/2011–2/2016 *New methods for interrogating white matter microstructure with MRI*  
Wellcome Trust Career Development Fellowship, PI: Miller, £686,000  
Role: Principal Investigator
- 3/2011–2/2014 *Investigating cortical pathways with diffusion-tensor imaging (DTI), manganese-enhanced MRI and modern histological techniques in monkeys and humans*  
BBSRC, PI: Krug, £1,000,000  
Role: Co-Investigator
- 7/2008–7/2011: *New tools for understanding white matter disease using diffusion MRI*  
EPSRC, PI: Smith, £550,000  
Role: Co-Investigator
- 4/2006–3/2011: *Improved imaging of brain function and connectivity*  
Royal Acad Eng/EPSRC Post-Doctoral Fellowship, PI: Miller, £240,000  
Role: Principal Investigator
- 1/2008–8/2010: *Studentship in fMRI of the Brainstem*  
GlaxoSmithKline, PI: Miller, £30,000  
Role: Principal Investigator
- 8/2008–8/2009: *Feasibility study for MRI and neuropathological investigations of the role of anatomical connections in determining patterns of neurodegeneration in MS*  
MS Society, PI: Johanssen-Berg, £136,000  
Role: Co-Investigator
- 4/2006–4/2008: *Integrated Structural and Diffusion Imaging for AD*  
GlaxoSmithKline, PI: Miller, £200,000  
Role: Principal Investigator
- 10/2005–6/2008: *Diffusion imaging of post-mortem brain tissue*  
Charles Wolfson Charitable Trust Studentship, PI: Aziz, £130,000  
Role: Co-Investigator and Studentship Supervisor
- 4/2004–4/2006: *Methodology development of steady-state diffusion and functional brain imaging*  
GlaxoSmithKline, PI: Jezzard, £140,000  
Role: Named Investigator and Principal Author
- 1/2004–1/2006: *Imaging brain activation with steady-state MRI*  
NIH R21 EB002969, PI: Pauly, \$300,000  
Role: Co-Investigator and Principal Author

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## PUBLICATIONS AND PRESENTATIONS

### Journal Articles (Original Research)

- Smith SM, **Miller KL**, Moeller S, Xu J, Auerbach EJ, Woolrich MW, Beckmann CF, Jenkinson M, Andersson J, Glasser MF, Van Essen DC, Feinberg DA, Yacoub ES, Ugurbil K (2012). Temporally-independent functional modes of spontaneous brain activity. *Proceedings of the National Academy of Science USA*, in press.
- Li L, **Miller KL**, Jezzard P (2012). DANTE prepared pulse trains: A novel approach to motion-sensitized and motion-suppressed quantitative magnetic resonance imaging. *Magnetic Resonance in Medicine*, in press.
- Frost R, Porter DA, **Miller KL**, Jezzard P (2012). Implementation and assessment of diffusion-weighted partial Fourier readout-segmented echo-planar imaging. *Magnetic Resonance in Medicine*, in press.
- **Miller KL**, McNab JA, Jbabdi S, Douaud G (2012). Diffusion tractography of post-mortem human brains: Optimization and comparison of spin echo and steady-state free precession techniques. *NeuroImage*, 59: 2284-2297.
- Smith SM, Bandettini PA, **Miller KL**, Behrens TE, Friston KJ, David O, Liu TT, Woolrich MW, Nichols TE (2012). The danger of systematic bias in group-level fMRI-lag-based causality estimation. *NeuroImage*, 59: 1228-1229.
- Sallet J, Mars RB, Noonan MP, Andersson JL, O'Reilly JX, Jbabdi S, Crosson PL, Jenkinson M, **Miller KL**, Rushworth MFS (2011). Social network size affects neural circuits in macaques. *Science*, 334: 697-700.
- Tijssen RH, Okell TW, **Miller KL** (2011). Real-time cardiac synchronization with fixed volume frame rate for reducing physiological instabilities in 3D fMRI. *NeuroImage*, 57: 1365–1375.
- **Miller KL**, Stagg CJ, Douaud G, Jbabdi S, Smith SM, Behrens TEJ, Jenkinson M, Chance SA, Esiri MM, Voets NL, Jenkinson N, Aziz TZ, Turner M, Johansen-Berg H, McNab JA (2011). Diffusion imaging of whole, post-mortem human brains on a clinical MRI scanner. *NeuroImage*, 57: 167–181.
- Mars RB, Jbabdi S, Sallet J, O'Reilly JX, Crosson PL, Olivier E, Noonan MP, Bergmann C, Mitchell AS, Baxter MG, Behrens TEJ, Johansen-Berg H, Tomassini V, **Miller KL**, Rushworth MFS (2011). Diffusion-weighted imaging tractography-based parcellation of the human parietal cortex and comparison with human and resting-state functional connectivity. *Journal of Neuroscience*, 31: 4087–4100.
- Smith SM, **Miller KL**, Salimi-Khorshidi G, Webster M, Beckmann CF, Nichols TE, Ramsey JD, Woolrich MW (2011). Network modelling methods for fMRI. *NeuroImage*, 54: 875-891.
- Feinberg DA, Moeller S, Smith SM, Auerbach E, Ramanna S, Glasser MF, **Miller KL**, Ugurbil K, Yacoub E. Multiplexed echo planar imaging with sub-second whole brain fMRI and fast diffusion imaging (2010). *PLoS ONE*, 5: e15710.
- Menke RA, Jbabdi S, **Miller KL**, Matthew PM, Zarei M (2010). Connectivity-based segmentation of the substantia nigra in humans and its implications in Parkinson's disease. *NeuroImage*, 52: 1175-1180.
- Gallichan D, Andersson JLR, Jenkinson M, Robson MD, **Miller KL** (2010). Reducing distortions in diffusion-weighted echo-planar imaging with a dual-echo blip-reversed sequence. *Magnetic Resonance in Medicine*, 64: 382-390.
- **Miller KL** (2010). Asymmetries of the balanced SSFP profile. Part I: Theory and observation. *Magnetic Resonance in Medicine*, 63: 385-395.
- **Miller KL**, Smith SM, Jezzard P (2010). Asymmetries of the balanced SSFP profile. Part II: White matter. *Magnetic Resonance in Medicine*, 63:396-406.

- Gallichan D, Scholz J, Bartsch A, Behrens TEJ, Robson MD, **Miller KL** (2010). Addressing a systematic vibration artifact in diffusion-weighted MRI. *Human Brain Mapping*, 31:192-202.
- McNab JA, Gallichan D, **Miller KL** (2010). 3D steady-state diffusion-weighted imaging with a trajectory using radially-batched internal navigator echoes (TURBINE). *Magnetic Resonance in Medicine*, 63: 235-242.
- Donahue MJ, Blicher JU, Ostergaard L, Feinberg DA, MacIntosh BJ, **Miller KL**, Gunther M, Jezzard P (2009). Cerebral blood flow, blood volume and oxygen metabolism dynamics in human visual and motor cortex as measured by BOLD, CBF-weighted and CBV-weighted MRI. *Journal of Cerebral Blood Flow and Metabolism*, 29:1856-1866.
- McNab JA, Voets NL, Jenkinson N, Squier W, **Miller KL**, Goodwin GM, Aziz T (2009). Reduced limbic connections may contraindicate subgenual cingulate deep brain stimulation for intractable depression. *Journal of Neurosurgery*, 111: 790-784.
- Gallichan D, Robson MD, Bartsch A, **Miller KL** (2009). TREMR: Table-resonance elastography with MR. *Magnetic Resonance in Medicine*, 62: 815–821.
- Smith SM, Fox PT, **Miller KL**, Glahn DC, Fox PM, MacKay CE, Filippini N, Watkins KE, Toro R, Laird AR, Beckmann CF (2009). Correspondence between activation and rest reveals the brain’s functional architecture. *Proceedings of the National Academy of Science USA*, 106: 13040–13045.
- Menke RA, Scholz J, **Miller KL**, Deoni SCL, Jbabdi S, Matthews PM, Zarei M (2009). MRI characteristics of the substantia nigra in Parkinson’s disease: A combined quantitative T1 and DTI study. *NeuroImage*, 47: 435–441.
- McNab JA, Jbabdi S, Deoni SC, Douaud G, Behrens TEJ, **Miller KL** (2009). High-resolution tractography in fixed human brain using diffusion-weighted steady state free precession. *NeuroImage*, 46: 775–785.
- Aravamuthan BR, McNab JA, **Miller KL**, Rushworth M, Jenkinson N, Stein JF, Aziz TZ (2009). Cortical and subcortical connections within the pedunculo-pontine nucleus of the primate *Macaca mulatta* determined using probabilistic diffusion tractography. *Journal of Clinical Neuroscience*, 16: 413–420.
- **Miller KL**, Jezzard P (2008). Modeling SSFP functional MRI contrast in the brain. *Magnetic Resonance in Medicine*, 60: 661-763.
- McNab JA, **Miller KL** (2008). Sensitivity of diffusion-weighted steady-state free precession to anisotropic diffusion. *Magnetic Resonance in Medicine*, 60:405–413.
- MacIntosh BJ, Pattison KTS, Gallichan D, Ahmad I, **Miller KL**, Feinberg DA, Wise RG, Jezzard P (2008). Measuring the effects of Remifentanyl on cerebral blood flow and arterial arrival time using 3D GRASE MRI with pulsed arterial spin labeling. *Journal of Cerebral Blood Flow and Metabolism*, 28: 1514-1522.
- Brooks J, Beckmann CF, **Miller KL**, Wise RG, Porro CA, Tracey I, Jenkinson M (2008). Physiological noise modelling for spinal functional magnetic resonance imaging studies. *NeuroImage*, 39:680–692.
- **Miller KL**, Bulte DP, Devlin H, Robson MD, Wise RG, Woolrich MW, Jezzard P, Behrens TEJ (2007). Evidence for a vascular contribution to diffusion FMRI at high b-value. *Proceedings of the National Academy of Science USA* 104: 20967–20972.
- **Miller KL**, Smith SM, Jezzard P, Wiggins GC, Wiggins CJ (2007). Signal and noise characteristics of SSFP FMRI: A comparison with GRE at multiple field strengths. *NeuroImage* 37: 1227–1236.
- Smith SM, Johansen-Berg H, Jenkinson M, Rueckert D, Nichols TE, **Miller KL**, Robson MD, Bartsch AJ, Behrens TEJ (2007). Tract-Based Spatial Statistics: A protocol for acquisition and voxelwise analysis of multi-subject diffusion data. *Nature Protocols* 2(3): 499-503.
- Smith SM, Jenkinson M, Beckmann C, **Miller KL**, Woolrich M (2007). Meaningful design and contrast estimability in FMRI. *NeuroImage* 34: 127-136.

- **Miller KL**, Smith SM, Jezzard P, Pauly JM (2006). High-resolution fMRI at 1.5T using balanced SSFP. *Magnetic Resonance in Medicine* 55: 161-170.
- Lee J, Santos JM, Conolly SM, **Miller KL**, Hargreaves BA, Pauly JM (2006). Respiration-induced B0 field fluctuation compensation in balanced SSFP: Real-time approach for transition-band SSFP fMRI. *Magnetic Resonance in Medicine* 55: 1197-1201.
- **Miller KL**, Hargreaves BA, Gold GE, Pauly JM (2004). Navigated steady-state diffusion imaging of knee cartilage. *Magnetic Resonance in Medicine* 51: 394-398.
- Obata T, Liu TT, **Miller KL**, Luh WM, Wong EC, Frank LR, Buxton RB (2004). Discrepancies between BOLD and flow dynamics in primary and supplementary motor areas: application of the balloon model to the interpretation of BOLD transients. *Neuroimage* 21: 144-153.
- **Miller KL**, Hargreaves BA, Lee J, Ress D, deCharms RC, Pauly JM (2003). Functional brain imaging using a blood oxygenation sensitive steady-state. *Magnetic Resonance in Medicine* 50: 675-683.
- **Miller KL**, Pauly JM (2003). Nonlinear phase correction of navigated diffusion imaging. *Magnetic Resonance in Medicine* 50: 343-353.
- **Miller KL**, Luh WM, Liu TT, Martinez A, Obata T, Wong EC, Frank LR, Buxton RB (2001). Nonlinear temporal dynamics of the cerebral blood flow response. *Human Brain Mapping* 13: 1-12.
- Potter CS, Chu H, Frey B, Green C, Kisseberth N, Madden TJ, **Miller KL**, Nahrstedt K, Pulokas J, Reilein A, Tchong D, Weber D, Carragher B (1999). Legikon: A system for fully automated acquisition of 1000 electron micrographs a day. *Ultramicroscopy* 77: 153-161.

## Invited Reviews and Book Chapters

- **Miller KL** (2011). Functional MRI using steady-state free precession (SSFP). *NeuroImage*, in press.
- Niazy RK, Xie J, **Miller KL**, Beckmann CF, Smith SM (2011). Spectral characteristics of resting-state networks. *Progress in Brain Research (v193): Slow Brain Oscillations of Sleep, Resting State and Vigilance*, Ch 17.
- **Miller KL**, Tijssen RH, Stikov N, Okell T (2011). Steady-state MRI: Methods for neuroimaging. *Imaging in Medicine*, 3:93-105.
- McNab JA, **Miller KL** (2010). Steady-state diffusion-weighted imaging: Theory, acquisition and analysis. *NMR in Biomedicine, Special Issue on Diffusion Imaging of the Brain*, 23:781-793.
- Lee J, Kim TS, Lee JH, **Miller KL** (2008). Steady-state free precession (SSFP) techniques for functional MRI. *Brain Mapping Research Trends (ISBN 978-1-60456-001-5)*, Ch 3.

## Intellectual Property

- Porter DP, Jezzard P, Frost R, **Miller KL**. Diffusion-weighted magnetic resonance imaging using 3D mosaic segmentation and 3D navigator phase correction. US Patent, Pending.
- **Miller KL** and Pauly JM. Functional magnetic resonance imaging using steady state free precession. US Patent 7,096,056.
- **Miller KL** and Pauly JM. Method for removing dynamic nonlinear phase errors from MRI data. US Patent 6,853,191.

## Invited Talks

- Seminar: *Novel microstructural measures with MRI*, CMIC, University College London, 2012.
- Invited Talk: *SSFP diffusion imaging*, Irish Diffusion Imaging Group (IDIG) Workshop, 2012.
- Educational Lecture: *Balanced SSFP and Unique Contrast Mechanisms*, ISMRM, 2012.
- Seminar: *Magnetic susceptibility contrast in the brain*, CIRC, Singapore, 2012.

- Plenary: *Studying magnetic susceptibility of brain tissues with SSFP*, ENC, 2012.
- Seminar: *MRI in basic neuroscience*, Siemens Magnet Technology, 2012.
- Invited Talk: *Beyond phase: Mining the riches of magnetic susceptibility*, OHBM Workshop, 2011.
- Invited Talk: *Susceptibility measures with SSFP*, School on MR and Brain Function, Erice, 2011.
- Educational Lecture: *Steady-state sequences: Spoiled and balanced methods*, ISMRM, 2011.
- Educational Lecture: *FMRI for Clinicians*, ISMRM, 2011.
- Seminar: *Developments in steady-state neuroimaging*, BIMG, Birmingham, 2011.
- Seminar: *Diffusion-Weighted SSFP*, Max Planck Institute, Leipzig, 2011.
- Seminar: *Developments in steady-state neuroimaging*, C3NL, Hammersmith Hospital, 2011.
- Seminar: *Diffusion-Weighted SSFP*, CRMBM, Marseilles, 2011.
- Invited Talk: *Diffusion imaging of post-mortem human brains*, NISALS Workshop, Oxford, 2010.
- Seminar: *SSFP brain imaging: The weird and the wonderful*, MGH, Boston, 2010.
- Seminar: *SSFP-based measures of susceptibility in white matter*, SPM-MRC, Nottingham, 2010.
- Educational Lecture: *Physics of MRI, FMRI and Diffusion*, FSL Course 2010.
- Educational Lecture: *Steady-state sequences: Spoiled and balanced methods*, ISMRM, 2010.
- Educational Lecture: *FMRI for Clinicians*, ISMRM, 2010.
- Seminar: *Steady-state diffusion imaging techniques*, University College London, 2010.
- Seminar: *Detecting susceptibility using SSFP profile asymmetries*, NIH, 2010.
- Seminar: *Novel neuroimaging techniques using SSFP*, Johns Hopkins University, 2010.
- Educational Lecture: *Physics of MRI, FMRI and Diffusion*, FSL Course, 2009.
- Educational Lecture: *FMRI for Clinicians*, ISMRM, 2009.
- Hot Topic: *Tissue-dependent asymmetries in the SSFP profile*, Gordon Conf on In Vivo MR, 2008.
- Seminar: *Arcane or amazing? The SSFP signal profile*, MRSRL, Stanford University, 2008.
- Seminar: *Functional MRI with SSFP*, UCSD Center for FMRI, San Diego, 2008.
- Educational Lecture: *Physics of Diffusion MRI*, FSL Course, 2008.
- Seminar: *Functional MRI with SSFP: Theory and practice*, CISC, Brighton, 2008.
- Educational Lecture: *Sequences for diffusion-weighted MRI*, ISMRM, 2008.
- Seminar: *Probing brain function and connectivity with SSFP*, FC Donders Centre, Nijmegen, 2008.
- Seminar: *Advances in SSFP for functional MRI*, GlaxoSmithKline CIC, London, 2007.
- Invited Talk: *SSFP and other 3D methods for high-resolution FMRI*, OHBM Workshop, 2007.
- Invited Talk: *Vascular contribution to diffusion FMRI*, UK Diffusion Interest Group, 2006.
- Invited Talk: *Neuroimaging applications of steady-state free precession*, BC-ISMIR, 2005.
- Seminar: *Motion-correction methods for diffusion imaging*, Engineering Sciences, Oxford, 2004.
- Seminar: *Improved diffusion and functional imaging with SSFP*, Wurzburg, 2004.
- Seminar: *Novel brain imaging methods using SSFP*, Siemens Medical Systems, Erlangen, 2004.
- Invited Talk: *Functional brain imaging with BOSS FMRI*, IEEE EMBS, 2004.

## Conference Proceedings (Original Research)

- Frost R, Porter DA, Douaud G, Jezzard P, **Miller KL** (2012). Reduction of diffusion-weighted readout-segmented scan time using a blipped-CAIPI modification. *20th International Society of Magnetic Resonance in Medicine, Melbourne.*
- Lam W, Jbabdi S, **Miller KL** (2012). Measurement of post-mortem brain microstructure using a clinical MR scanner with oscillating gradients. *20th International Society of Magnetic Resonance in Medicine, Melbourne.*
- Foxley S, Chen WC, **Miller KL** (2012). Susceptibility effects in white matter: Orientation dependence under a plurality of contrast mechanisms. *20th International Society of Magnetic Resonance in Medicine, Melbourne.*
- Chen WC, Foxley S, **Miller KL** (2012). A high-resolution, large-scale 2D geometric magnetic susceptibility model of white matter microstructure. *20th International Society of Magnetic Resonance in Medicine, Melbourne.*
- Chen WC, **Miller KL** (2012). A polypropylene fiber phantom to simulate the magnetic susceptibility effects of white matter microstructure at varying orientation to B<sub>0</sub>. *20th International Society of Magnetic Resonance in Medicine, Melbourne.*
- Tijssen RHN, **Miller KL** (2012). Retrospective corrections for 3D FMRI: RETROICOR or RETROKCOR? *20th International Society of Magnetic Resonance in Medicine, Melbourne.*
- Tijssen RHN, Jenkinson M, **Miller KL** (2012). Regressor selection for RETROICOR and RETROKCOR corrections of 3D FMRI data. *20th International Society of Magnetic Resonance in Medicine, Melbourne.*
- Li L, **Miller KL**, Near J, Jezzard P (2012). Steady-state motion-induced contrast using DANTE pulse trains: A novel approach to black blood imaging. *20th International Society of Magnetic Resonance in Medicine, Melbourne.*
- Li L, Kong Y, Brooks J, **Miller KL**, Jezzard P (2012). Cerebrospinal fluid (CSF) flow suppressed spinal cord functional MRI using multi-slice DANTE-EPI. *20th International Society of Magnetic Resonance in Medicine, Melbourne.*
- Li L, **Miller KL**, Jezzard P (2012). A theoretical framework for DANTE prepared pulse trains: A novel approach to motion sensitized and motion suppressed quantitative MRI. *20th International Society of Magnetic Resonance in Medicine, Melbourne.*
- McNab JA, Polimeni J, **Miller KL**, Stevens A, Wang R, Augustinack J, Fischl B, Wald LL (2011). Diffusion orientations in primary sensory cortices appear parallel to the cortical surface. *17th Organization Human Brain Mapping, Quebec City.*
- Xie J, Jezzard P, Okell T, **Miller KL**, Chappell M, Smith SM (2011). Resting state network study of quantitative perfusion fluctuations. *17th Organization Human Brain Mapping, Quebec City.*
- **Miller KL**, Stagg CJ, Jbabdi S, Johansen-Berg H, McNab JA (2011). Diffusion properties of whole, post-mortem human brains. *19th International Society of Magnetic Resonance in Medicine, Montreal.*
- Chen WC, **Miller KL** (2011). A simple 3D susceptibility model to simulate magnetic field patterns in white matter microstructure. *19th International Society of Magnetic Resonance in Medicine, Montreal.*
- Tijssen RH, Okell T, **Miller KL** (2011). A real-time cardiac synchronization method for reducing flow-induced instabilities in SSFP FMRI of the brainstem. *19th International Society of Magnetic Resonance in Medicine, Montreal.*
- Tijssen RH, **Miller KL** (2011). The effect of cardiac synchronization on the temporal characteristics of 3D SSFP and 3D SPGR. *19th International Society of Magnetic Resonance in Medicine, Montreal.*
- Smith SM, **Miller KL**, Beckmann CF, Moeller S, Ugurbil K, Yacoub E, Feinberg D (2011). Quantitative evaluation of RSN functional contrast in low-TR FMRI. *19th International Society of Magnetic Resonance in Medicine, Montreal.*

- Okell T, Schmitt P, Bi X, Chappell MA, Tijssen RH **Miller KL**, Jezzard P (2011). 4D vessel-encoded arterial spin labelling angiography. *19th International Society of Magnetic Resonance in Medicine, Montreal.*
- **Miller KL**, Douaud G, Jbabdi S, Behrens TEJ, McNab JA (2010). Diffusion tractography in ex vivo human brains: Steady-state free precession outperforms spin echo *16th Organization Human Brain Mapping, Barcelona.*
- RH Tijssen, **Miller KL** (2010). Reducing physiological noise in 3D brainstem fMRI: Cardiac synchronization with fixed frame rate. *16th Organization Human Brain Mapping, Barcelona.*
- Smith SM, **Miller KL**, Woolrich MW (2010). Evaluation of network connectivity methods for resting fMRI timeseries. *16th Organization Human Brain Mapping, Barcelona.*
- Xie J, Beckmann CF, Kong Y, **Miller KL**, Jezzard P, Smith SM (2010). Identification of Resting State Networks Using Whole-Brain CASL *16th Organization Human Brain Mapping, Barcelona.*
- Menke RA, Jbabdi S, **Miller KL**, Matthew PM, Zarei M (2010). Connectivity-based Segmentation of the Substantia Nigra in Humans *16th Organization Human Brain Mapping, Barcelona.*
- Chappell MH, Lehn H, Goa PE, Kristoffersen A, Tijssen RH, Hberg AK, **Miller KL** (2010). High resolution fMRI using balanced steady-state free precession. *18th International Society of Magnetic Resonance in Medicine, Stockholm.*
- Chen WC, Tijssen RH, Rodgers C, Near J, **Miller KL** (2010). Balanced SSFP profile asymmetries reflect frequency distribution asymmetries: Evidence from chemical shift imaging (CSI). *18th International Society of Magnetic Resonance in Medicine, Stockholm.*
- Goa PE, Kristoffersen A, Chappell MH, Tijssen RH, Hberg AK, **Miller KL** (2010). Passband bSSFP: Functional contrast compared to GRE-EPI and SE-EPI at 3T. *18th International Society of Magnetic Resonance in Medicine, Stockholm.*
- Jbabdi S, **Miller KL**, Groves A (2010). Detecting restriction using non-parametric modelling of diffusion MR data. *18th International Society of Magnetic Resonance in Medicine, Stockholm.*
- **Miller KL**, Douaud G, Jbabdi S, Behrens TEJ, McNab JA (2010). Comparison of spin echo and steady-state free precession sequences for diffusion tractography of whole, ex-vivo human brains. *18th International Society of Magnetic Resonance in Medicine, Stockholm.*
- Tijssen RH, Smith SM, Jezzard P, Frost R, Jenkinson M, **Miller KL** (2010). Characterization and Correction of Physiological Instabilities in 3D fMRI. *18th International Society of Magnetic Resonance in Medicine, Stockholm.*
- Xie J, Jezzard P, Li L, Kong Y, Beckmann C, **Miller KL**, Smith SM (2010). Identification of resting state networks using whole-brain CASL. *18th International Society of Magnetic Resonance in Medicine, Stockholm.*
- Seixas D, Palace J, Jbabdi S, **Miller KL**, MacIntosh BJ, Donahue MJ, Deoni SCL, Kolind S, Weir A, Tracey I (2009). The thalamus and neuropathic pain in multiple sclerosis. *6th European Federation of IASP Chapters, Lisbon.*
- Seixas D, Palace J, **Miller KL**, MacIntosh BJ, Donahue MJ, Jbabdi S, Deoni SCL, Kolind S, Weir A, Tracey I (2009). A clinical and imaging protocol for the detailed evaluation of chronic neuropathic pain in multiple sclerosis. *6th European Federation of IASP Chapters, Lisbon.*
- Menke RA, Scholz J, **Miller KL**, Deoni SCL, Jbabdi S, Matthew PM, Zarei M (2009). MRI-guided discrimination of Parkinson patients and healthy control subjects: A Combined Quantitative T1 and DTI Study. *15th Organization Human Brain Mapping, San Francisco.*
- Smith SM, **Miller KL**, Mackay CE, Filippini N, Beckmann CF (2009). Towards a functional hierarchy of resting-state networks. *15th Organization Human Brain Mapping, San Francisco.*
- Tijssen RH, van Strien N, Chappell M, Lehn H, Fillipini N, Haberg A, **Miller KL** (2009). High resolution, low distortion, fMRI of the Hippocampus using balanced SSFP at 3T. *15th Organization Human Brain Mapping, San Francisco.*

- Woolf JM, Menke RA, **Miller KL**, Stein JF, Zarei M (2009). White matter correlates of Parkinson's disease progression. *15th Organization Human Brain Mapping, San Francisco*.
- Donahue MJ, Blicher JU, MacIntosh BJ, **Miller KL**, Ostergaard L, Feinberg DA, Guenther M, Jezard P (2009) Whole-brain non-invasive hemodynamic imaging, enabled by a novel CBV-weighted single-shot 3D VASO-FLAIR GRASE sequence combined with CBF-weighted ASL and BOLD fMRI, identifies regional hemodynamic and metabolic discrepancies. *17th International Society of Magnetic Resonance in Medicine, Honolulu*.
- Donahue MJ, Piechnik SK, Tijssen R, Gallichan D, **Miller KL**, Jezard P (2009). A theoretical and experimental investigation of vascular-space-occupancy (VASO) blood nulling times: influence of hematocrit and oxygenation on null times and CBV quantification. *17th International Society of Magnetic Resonance in Medicine, Honolulu*.
- Gallichan D, Robson MD, Bartsch AJ, **Miller KL** (2009). TREMR: Table-resonance elastography with MR. *17th International Society of Magnetic Resonance in Medicine, Honolulu*.
- Gallichan D, Scholz J, Bartsch AJ, Behrens TEJ, Robson MD, **Miller KL** (2009). Addressing a systematic vibration artefact in diffusion-weighted MR images. *17th International Society of Magnetic Resonance in Medicine, Honolulu*.
- Jenkinson M, Tijssen R, Brooks J, **Miller KL** (2009). Voxel-wise regressor selection for physiological noise correction with RETROICOR. *17th International Society of Magnetic Resonance in Medicine, Honolulu*.
- McNab JA, Gallichan D, Robson MD, **Miller KL** (2009). Steady-state diffusion-weighted imaging with Trajectory Using Radially Batched Internal Navigator Echoes (TURBINE). *17th International Society of Magnetic Resonance in Medicine, Honolulu*.
- **Miller KL**, Jezard P (2009). Balanced SSFP profile asymmetries detect small frequency shifts in white matter. *17th International Society of Magnetic Resonance in Medicine, Honolulu*.
- **Miller KL**, Jezard P, Smith SM (2009). Balanced SSFP profile asymmetries are sensitive to white matter tract structure. *17th International Society of Magnetic Resonance in Medicine, Honolulu*.
- Stikov N, Keenan KE, **Miller KL**, Barral JK, Gold GE, Pauly JM (2009). Balanced SSFP profile asymmetries in cartilage. *17th International Society of Magnetic Resonance in Medicine, Honolulu*.
- Tijssen RH, Jenkinson M, Jezard P, **Miller KL** (2009). Characterising physiological noise in the brainstem: passband SSFP vs GRE-EPI. *17th International Society of Magnetic Resonance in Medicine, Honolulu*.
- McNab JA, Gallichan D, Robson MD, **Miller KL** (2009). Steady-state diffusion-weighted imaging with trajectory using radially batched internal navigator echoes (TURBINE). *ISMRM Workshop on Data Sampling and Image Reconstruction, Sedona*.
- Gallichan D, Andersson JL, Jenkinson M, Robson MD, **Miller KL** (2008). Reducing distortions in DW-EPI with a dual echo blip-reversed sequence. *14th Organization for Human Brain Mapping, Melbourne*.
- McNab JA, Jbabdi S, Deoni SCL, Douaud G, Behrens TEJ, **Miller KL** (2008). Probabilistic tractography using steady-state diffusion imaging: A promising option for achieving higher spatial and angular resolution. *14th Organization for Human Brain Mapping, Melbourne*.
- McNab JA, Voets N, Chance S, Douaud G, Jenkinson N, Aziz T, **Miller KL** (2008). High resolution DTI in whole, fixed, human brain reveals cortical fibre patterns that correspond well with histological stains. *14th Organization for Human Brain Mapping, Melbourne*.
- Smith SM, Niazy R, Beckmann CF, **Miller KL** (2008). Resting state networks: Neither low frequency nor anti-correlated? *14th Organization for Human Brain Mapping, Melbourne*.
- Devlin H, Rostrup E, Bulte DP, **Miller KL**, Jezard P (2008). Intravascular vs extravascular contributions to fMRI signal change for visual stimulus and hypercapnia. *16th International Society of Magnetic Resonance in Medicine, Toronto*.

- Gallichan D, Andersson JL, Jenkinson M, Robson MD, **Miller KL** (2008). Reducing distortions in DW-EPI with a dual echo blip-reversed sequence. *16th International Society of Magnetic Resonance in Medicine*, Toronto.
- MacIntosh BJ, Pattison KT, Gallichan D, Ahmad I, **Miller KL**, Feinberg D, Jezzard P (2008). Using 3D GRASE-ASL to measure hypercapnic changes in cerebral blood flow and arterial arrival time *16th International Society of Magnetic Resonance in Medicine*, Toronto.
- McNab JA, Voets NL, Douaud G, Jenkinson N, Aziz T, **Miller KL** (2008). A comparison of in vivo and ex vivo diffusion tensor imaging in the same patient. *16th International Society of Magnetic Resonance in Medicine*, Toronto.
- McNab JA, Jbabdi S, Deoni SCL, Douaud G, Behrens TEJ, **Miller KL** (2008). High-resolution probabilistic tractography in whole, fixed, human brain using diffusion-weighted steady-state free precession. *16th International Society of Magnetic Resonance in Medicine*, Toronto.
- McNab JA, Jenkinson N, Aziz T, **Miller KL** (2008). Constructive interference steady-state imaging in post-mortem human brain: An alternative or adjunct to conventional autopsy? *16th International Society of Magnetic Resonance in Medicine*, Toronto.
- McNab JA, **Miller KL** (2008). Modeling diffusion-weighted steady-state free precession in terms of the reciprocal spatial wave vector and non-Gaussian diffusion probability density functions. *16th International Society of Magnetic Resonance in Medicine*, Toronto.
- **Miller KL**, Bulte DP, Douaud G, Jezzard P (2008). Tissue-dependent asymmetries in the SSFP off-resonance profile. *16th International Society of Magnetic Resonance in Medicine*, Toronto.
- **Miller KL**, Jezzard P (2008). A model for SSFP FMRI. *16th International Society of Magnetic Resonance in Medicine*, Toronto.
- Smith SM, McNab JA, **Miller KL** (2008). Partial volume modeling in diffusion MRI. *16th International Society of Magnetic Resonance in Medicine*, Toronto.
- Brooks JC, Jenkinson M, **Miller KL**, Clare S, Tracey I (2007). Improved physiological noise modelling reveals expected pattern of spinal cord activation *15th International Society of Magnetic Resonance in Medicine*, Berlin.
- Kahn I, Wiggins CJ, Wiggins GC, **Miller KL**, Benner T, Fischl B, Wald LL, Dickerson BL, Buckner RL (2007). High-Resolution Human Functional MRI: Feasibility and Specificity at High (3T) and Ultra-High (7T) Fields *15th International Society of Magnetic Resonance in Medicine*, Berlin.
- McNab JA, **Miller KL** (2007). Too many peanuts makes you fat: Sensitivity of diffusion-weighted steady-state free precession to anisotropic diffusion in *ex vivo* brain tissue *15th International Society of Magnetic Resonance in Medicine*, Berlin.
- **Miller KL** (2007). Characterization of passband SSFP FMRI: A comparison with GRE at multiple field strengths *15th International Society of Magnetic Resonance in Medicine*, Berlin.
- **Miller KL**, Bulte DP, Devlin H, Robson MD, Wise RG, Woolrich MW, Jezzard P, Behrens TEJ (2007). Evidence for a vascular component in the diffusion FMRI signal: A hypercapnia study *15th International Society of Magnetic Resonance in Medicine*, Berlin.
- Tijssen HN, Jezzard P, Bulte DP, **Miller KL** (2007). Minimizing BOLD contamination in VASO FMRI with SE-EPI *15th International Society of Magnetic Resonance in Medicine*, Berlin.
- Kahn I, Wiggins CJ, Wiggins GC, **Miller KL**, Benner T, Fischl B, Wald LL, Buckner RL, Dickerson BC (2006). High-resolution human 7T functional MRI: Feasibility and specificity *Society for Neuroscience*, Atlanta.
- Andersson JLR, **Miller KL** (2006). A general model for estimation of distortion in EPI images *12th Organization for Human Brain Mapping*, Florence.
- Brooks JC, Beckmann CF, **Miller KL**, Schweinhardt P, Jenkinson M, Tracey I (2006). Independent component analysis (ICA) of physiological noise in spinal EPI images *12th Organization for Human Brain Mapping*, Florence.

- Brooks JC, Jenkinson M, Clare S, Beckmann CF, **Miller KL**, Schweinhardt P, Wise R, Gallichan D, Tracey I (2006). Strategies for modelling physiological noises in spinal EPI images *12th Organization for Human Brain Mapping*, Florence.
- Dickerson BC, Wright CI, Miller S, Feczko E, **Miller KL**, Wald LL, Wiggins GC, Wiggins CJ (2006). Ultra high-field differentiation of medial temporal lobe function: Sub-millimeter fMRI of amygdala and hippocampal activation at 7 Tesla *12th Organization for Human Brain Mapping*, Florence.
- **Miller KL**, Wiggins GC, Wiggins CJ (2006). High-resolution FMRI with isotropic voxels using 3D stack-of-segmented EPI *12th Organization for Human Brain Mapping*, Florence.
- Devlin H, Devlin JT, Woolrich M, **Miller KL**, Jezzard P (2006). An efficient method for obtaining subject-specific HRF estimates in event-related FMRI. *14th International Society of Magnetic Resonance in Medicine*, Seattle.
- Lee J, Gurney PT, Dharmakumar R, Wright GA, Hargreaves BA, Shankaranarayanan A, **Miller KL**, Nishimura DG, Pauly JM (2006). Blood oxygenation (BOX) level dependent functional brain imaging using steady-state free precession. *14th International Society of Magnetic Resonance in Medicine*, Seattle.
- McNab J, **Miller KL** (2006). Sensitivity of diffusion-weighted steady-state free precession to diffusion anisotropy. *14th International Society of Magnetic Resonance in Medicine*, Seattle.
- **Miller KL**, Wiggins GC, Wiggins CJ (2006). Isotropic, high-resolution FMRI at 7T using 3D stack-of-segmented EPI. *14th International Society of Magnetic Resonance in Medicine*, Seattle.
- **Miller KL**, Jezzard P, Smith SM, Wiggins GC, Wiggins CJ (2006). Characterization of SSFP FMRI signal and noise: A comparison at multiple field strengths. *14th International Society of Magnetic Resonance in Medicine*, Seattle.
- Kim TS, **Miller KL**, Gold GE, Pauly JM (2005). Motion correction in diffusion weighted SSFP imaging of cartilage. *13th International Society of Magnetic Resonance in Medicine*, Miami.
- Lee J, Santos JM, Hargreaves BA, **Miller KL**, Pauly JM (2005). Real-time compensation for respiratory-induced frequency shift in balanced SSFP by RF phase feedback. *13th International Society of Magnetic Resonance in Medicine*, Miami.
- Lee J, Lee JH, **Miller KL**, Pauly JM (2005). High resolution 3D spiral trajectory for BOSS FMRI. *13th International Society of Magnetic Resonance in Medicine*, Miami.
- **Miller KL**, Smith SM, Jezzard P, Pauly JM (2005). High-resolution FMRI at 1.5T Using 3D BOSS *13th International Society of Magnetic Resonance in Medicine*, Miami.
- **Miller KL**, Hargreaves BA, Lee J, Ress D, deCharms C, Pauly JM (2004). Functional brain imaging with BOSS FMRI (invited). *26th IEEE Engineering in Medicine and Biology Society*, San Francisco.
- **Miller KL**, Ress D, deCharms C, Pauly JM (2004). High-resolution, multi-frequency BOSS FMRI at 1.5T. *10th Organization for Human Brain Mapping*, Budapest.
- **Miller KL**, Ress D, deCharms C, Pauly JM (2004). High-resolution BOSS FMRI at 1.5T. *12th International Society of Magnetic Resonance in Medicine*, Kyoto.
- **Miller KL**, Lee J, Hargreaves BA, deCharms C, Pauly JM (2003). Functional imaging using frequency-sensitive steady-state MRI. *9th Organization for Human Brain Mapping*, New York.
- **Miller KL**, Lee J, Hargreaves BA, deCharms C, Pauly JM (2003). Functional MRI using SSFP phase transitions. *11th International Society of Magnetic Resonance in Medicine*, Toronto.
- **Miller KL**, Hargreaves BA, Gold GE, Pauly JM (2003). Navigated 3D steady-state diffusion imaging of knee cartilage. *11th International Society of Magnetic Resonance in Medicine*, Toronto.
- **Miller KL**, Pauly JM (2002). Nonlinear phase correction of navigated diffusion-weighted imaging. *Gordon Research Conference on In Vivo Magnetic Resonance*, Colby-Sawyer College, NH.

- **Miller KL**, Meyer CH, Pauly JM (2002). Self-navigated spirals for high resolution steady-state diffusion imaging. *10th International Society of Magnetic Resonance in Medicine*, Honolulu.
- **Miller KL**, Pauly JM (2002). Nonlinear navigated motion correction for diffusion imaging. *10th International Society of Magnetic Resonance in Medicine*, Honolulu.
- **Miller KL**, Gold GE, Pauly JM (2002). Navigated steady-state diffusion imaging of knee cartilage. *10th International Society of Magnetic Resonance in Medicine*, Honolulu.
- **Miller KL**, Nishimura DG, Pauly JM (2001). A navigated steady-state sequence for diffusion imaging. *9th International Society of Magnetic Resonance in Medicine*, Glasgow.
- Liu TT, **Miller KL**, Wong EC, Frank LR, Buxton RB (2000). Identifying meaningful components in independent component analysis *6th Organization for Human Brain Mapping*, San Antonio.
- Liu TT, **Miller KL**, Wong EC, Frank LR, Buxton RB (2000). Using image entropy to select meaningful spatial maps in independent components analysis. *8th International Society of Magnetic Resonance in Medicine*, Denver.
- **Miller KL**, Luh WM, Liu TT, Martinez A, Obata T, Wong EC, Frank LR, Buxton RB (2000). Characterizing the dynamic perfusion response to stimuli of short duration. *8th International Society of Magnetic Resonance in Medicine*, Denver.
- Obata T, Liu TT, **Miller KL**, Luh WM, Wong EC, Frank LR, Buxton RB (2000). BOLD overshoots at task-switching points in supplementary motor area. *8th International Society of Magnetic Resonance in Medicine*, Denver.
- Buxton RB, **Miller KL**, Wong EC, Frank LR (1999). Application of the balloon model to the BOLD response to stimuli of different duration. *7th International Society of Magnetic Resonance in Medicine*, Philadelphia.
- **Miller KL**, Buxton RB, Wong EC, Frank LR (1999). The linearity of the cerebral blood flow response to brief motor tasks. *7th International Society of Magnetic Resonance in Medicine*, Philadelphia.
- Buxton RB, **Miller KL**, Frank LR, Wong EC (1998). BOLD signal dynamics: The balloon model with viscoelastic effects. *6th International Society for Magnetic Resonance in Medicine*, Sydney.
- Nahrstedt K, Chu H, Lin C, Potter CS, Kisseberth N, Carragher B, Frey BJ, **Miller KL**, Josephs R (1998). Distributed QoS-aware high performance environment for support of automated TEM. *7th IEEE High Performance Distributed Computing*, Chicago.
- Potter CS, Carragher B, Frey B, Josephs R, Kisseberth N, **Miller KL**, Nahrstedt K (1998). A testbed for automated image acquisition from a TEM. *14th International Congress on Electron Microscopy*, Cancun.