

## Dr Samantha J. Holdsworth

BSc *University of Canterbury, New Zealand*; MSc *Queensland University of Technology*;  
PhD *University of Queensland, Australia*; Postdoc *Stanford University, U.S.A*



**Research specialisation:** \* Fast/high resolution neuroimaging \* New MRI acquisition & image processing methods \* New MRI contrast mechanisms \* Improving the quality/speed of MRI scans.

**Experience:** 18 years' as an academic. Strong background in medical physics, MRI acquisition, image reconstruction and image processing. Journal reviewer: *Magnetic Resonance in Medicine (MRM)*; *Journal of Magnetic Resonance Imaging (JMRI)*; *Radiology*; *American Journal of Roentgenology (AJR)*; *American Journal of Neuroradiology (AJNR)*; *NeuroImage*, *Journal of Neurological Sciences (JNS)*. Prestigious awards: *Caffey award* (Society for Paediatric Radiology 2010) on fast high resolution neuroimaging, and *International Society of Magnetic Resonance Imaging award* for a novel motion-corrected fast paediatric brain imaging protocol.

**Research overview:** Focus on developing novel, fast, and effective ways to improve patient diagnoses through improved MRI methodologies and new contrast mechanisms – with a focus on stroke and neurodegenerative disorders. Pioneer of high resolution diffusion imaging methods in MRI, and amplified MRI – a novel method of visualizing pulsatile brain motion.

**Postgraduate supervision:** Mentored undergraduate and postgraduate students, postdoctoral fellows, and clinicians at Stanford University in a variety of topics involving MRI acquisition and image processing.

**Research publications:** 150 publications in journals (39), book chapters (3), conference paper/abstract proceedings (108). Example publications:

S.J. Holdsworth, W. Ni, G. Zaharchuk, M. Rahimi, M. Moseley. Amplified Magnetic Resonance Imaging (aMRI), *Magnetic Resonance in Medicine* (2016).

S.J. Holdsworth, K. Yeom, M. Moseley, S. Skare. Fast 3D motion corrected susceptibility-weighted imaging using short-axis propeller (SAP)-EPI, *Journal of Magnetic Resonance Imaging*, 41(5):1447-53 (2014)

S.J. Holdsworth, S. Skare, K. Yeom, M.U. Antonucci, J.B. Andre, J. Rosenberg, M. Straka, M. Aksoy, N.J. Fischbein, R. Bammer, M. Moseley, G. Zaharchuk, S. Skare. Diffusion-weighted Imaging (DWI) with Dual Echo EPI for Improved Lesion Sensitivity, *American Journal of Neuroradiology*, 35(7):1293-302 (2014).

S.J. Holdsworth, M. Aksoy, R. Newbould, K. Yeom, A.T. Van, P.D. Barnes, R. Bammer, S. Skare. Diffusion tensor imaging (DTI) with retrospective motion correction for large-scale pediatric imaging. *Journal for Magnetic Resonance Imaging* 36(4):961-71, 2012

S.J. Holdsworth, S. Skare, K. Yeom, A.J. Gentles, P. Barnes, R. Bammer. Clinical Application of Readout-Segmented (RS)-EPI for diffusion-weighted imaging in pediatric brain. *American Journal of Neuroradiology* 34:1274-1279, 2011

S.J. Holdsworth, S. Skare, R. D. Newbould, R. Bammer Robust GRAPPA-Accelerated Diffusion-Weighted Readout-Segmented (RS)-EPI. *Magnetic Resonance in Medicine* 62:1629-1640, 2009 (PMID: 19859974)

S.J. Holdsworth, R. Bammer. *Magnetic Resonance Imaging Techniques: fMRI, DWI, and PWI. Seminars in Neurology* 28: 395-406, 2008

S.J. Holdsworth, S. Skare, R. D. Newbould, R. Guzmán, N. H. Blevins, R. Bammer. Readout-segmented EPI for rapid high resolution diffusion imaging at 3T. *European Journal of Radiology* 65:36-46, 2008

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