Professor Stephen Smith

Oxford Centre for Functional Magnetic Resonance Imaging of the Brain (FMRIB), which is part of:
Wellcome Centre for Integrative Neuroimaging (WIN)
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Positions

2005 –	University Professor of Biomedical Engineering, Department of Clinical Neurology, Oxford University Head of Analysis, FMRIB Centre
2004 – 2005	University Reader in Biomedical Image Analysis, Department of Clinical Neurology, Oxford University
2003 – 2015	Associate Director, FMRIB
2002 – 2007	EPSRC Advanced Research Fellow
2000 – 2004	University Research Lecturer, Faculty of Clinical Medicine, Oxford University
1997 – 2003	Head of Image Analysis, FMRIB, Oxford University
1989 – 1997	Grade 7 Scientist (final post), Computer Vision and Image Processing Group, Defence Research Agency, UK
2013 – 2014	Chair, Organisation for Human Brain Mapping
2013 –	Senior Editor, NeuroImage
2011 – 2013	Handling Editor, NeuroImage
2008 – 2011	Handling Editor, Human Brain Mapping

Education

1996	CEng MIEE
1989 – 1992	D.Phil. in Computer Vision, Dept. Engineering, Oxford University
1986 – 1989	B.A. (hons, first class) in Physics, Oxford University

Brief Biography

Steve Smith is Professor of Biomedical Engineering and head of the Analysis Group at WIN/FMRIB. FMRIB's Analysis Group, which he started in 1997, now comprises about 30 research fellows, postdocs, students and staff, carrying out functional and structural brain image analysis and statistics research. The group has produced the brain image analysis software package FSL (FMRIB Software Library) which is widely used in many laboratories across the world.

Recent personal research has concentrated on resting state networks, showing that these correspond closely to explicit functional networks as seen in task FMRI (Smith, PNAS, 2009), showing new networks on the basis of distinct temporal dynamics (Smith, PNAS, 2012), and relating functional networks to behaviour and lifestyle (Smith, Nature Neuroscience, 2015). Currently, the FMRIB Analysis Group is playing a major role in the Human Connectome Project (Smith, TICS 2013; Smith, NeuroImage 2014), UK Biobank Imaging (Miller, Nature Neuroscience 2016), and the Developing Human Connectome Project.

Publications

Scopus: h-index=121, 300 papers, average citations per paper ∼400

Journal Papers

[1] S. Afyouni, S.M. Smith, and T.E. Nichols. Effective degrees of freedom of the Pearson's correlation coefficient under autocorrelation. *NeuroImage*, 199:609–625, 2019.

[2] M. Bastiani, J.L.R. Andersson, L. Cordero-Grande, M. Murgasova, J. Hutter, A.N. Price, A. Makropoulos, S.P. Fitzgibbon, E. Hughes, D. Rueckert, S. Victor, M. Rutherford, A.D. Edwards, S.M. Smith, D. Tournier, J.V. Hajnal, S. Jbabdi, and S.N. Sotiropoulos. Automated processing pipeline for neonatal diffusion MRI in the developing Human Connectome Project. *NeuroImage*, 185:750–63, 2019.

[3] L. Baxter, S. Fitzgibbon, F. Moultrie, S. Goksan, M. Jenkinson, S. Smith, J. Andersson, E. Duff, and R. Slater. Optimising neonatal fMRI data analysis: Design and validation of an extended dHCP preprocessing pipeline to characterise noxious-evoked brain activity in infants. *NeuroImage*, 186:286–300, 2019.

[4] J. Bijsterbosch, C.F. Beckmann, M.W. Woolrich, S.M. Smith, and S.J. Harrison. The relationship between spatial configuration and functional connectivity of brain regions revisited. *eLife*, 2019.

[5] S.Y. Bookheimer, D.H. Salat, M. Terpstra, B.M. Ances, D.M. Barch, R.L. Buckner, G.C. Burgess, S.W. Curtiss, M. Diaz-Santos, J.S. Elam, B. Fischl, D.N. Greve, H.A. Hagy, M.P. Harms, O.M. Hatch, T. Hedden, C. Hodge, K.C. Japardi, T.P. Kuhn, T.K. Ly, S.M. Smith, L.H. Somerville, K. Ugurbil, A. van der Kouwe, D. Van Essen, R.P. Woods, and E. Yacoub. The lifespan human connectome project in aging: An overview. *NeuroImage*, 185:335–48, 2019.

[6] D. Bzdok, T.E. Nichols, and S.M. Smith. Towards algorithmic analytics for large-scale datasets. *Nature Machine Intelligence*, 1:296–306, 2019.

[7] M.F. Glasser, T.S. Coalson, J.D. Bijsterbosch, S.J. Harrison, Harms M.P., A. Anticevic, D.C. Van Essen, and S.M. Smith. Classification of temporal ICA components for separating global noise from fMRI data: Reply to Power. *NeuroImage*, 197:435–8, 2019.

[8] M. Hernandez-Fernandez, I. Reguly, S. Jbabdi, M. Giles, S. Smith, and S.N. Sotiropoulos. Using GPUs to accelerate computational diffusion MRI: From microstructure estimation to tractography and connectomes. *NeuroImage*, 188:598–615, 2019.

[9] J. Mollink, S.M. Smith, L.T. Elliott, M. Kleinnijenhuis, M. Hiemstra, F. Alfaro-Almagro, J. Marchini, A.-M. van Cappellen van Walsum, S. Jbabdi, and K.L. Miller. The spatial correspondence and genetic influence of interhemispheric connectivity with white matter microstructure. *Nature Neuroscience*, 22:809–19, 2019.

[10] L. Nobis, S.G. Manohar, S.M. Smith, F. Alfaro-Almagro, M. Jenkinson, C.E. Mackay, and M. Husain. Hippocampal volume across age: Nomograms derived from over 19,700 people in UK Biobank. *NeuroImage: Clinical*, 23:101904, 2019.

[11] R. Sala-Llonch, S.M. Smith, M. Woolrich, and E.P. Duff. Spatial parcellations, spectral filtering, and connectivity measures in fMRI: Optimizing for discrimination. *Human Brain Mapping*, 40(2):407–19, 2019.

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