

## Department Head



## Ruth O'Gorman Tuura, PD Dr. phil. Physicist

### Address

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## Research

- Normal development of brain structure and function in neonates, children, and adolescents
- Neural correlates of atypical development in infants or children born preterm, with hypoxic ischemic encephalopathy, congenital heart disease, or ADHD
- Advanced MR imaging and spectroscopy methods (arterial spin labelling perfusion MRI, GABA- and lactate-edited MR spectroscopy, functional MRI, quantitative MR relaxometry) and their translation into clinical practice
- Assessment of MRI measures as biomarkers for outcome in infants and children at risk for neurodevelopmental impairment.

## Curriculum vitae

### Education

2013	<b>Venia legendi (Habilitation) in Pediatric MR Imaging</b> , Faculty of Medicine, University of Zurich, Switzerland
2006	<b>PhD in Neuroimaging</b> , King's College London, UK
2000	<b>Postgraduate Diploma in Medical Physics</b> , Institute of Physics and Engineering in Medicine, UK
1998	<b>MSc in Radiation Physics with Medical Applications</b> , University College London
1997	<b>BA in Physics and Mathematics</b> , Williams College, MA, USA

### Professional Training

2011	<b>Good Clinical Practice (GCP) training</b> , Center for Clinical Research, University of Zürich, Switzerland; Joint Clinical Trials Office, King's College London, UK
2007	<b>Chartered Scientist (CSci)</b> , UK science council
2007	Member of the Institute of Physics and Engineering in Medicine (MIPeM)
2005	<b>State registration</b> as a UK clinical scientist (SRCS)

### Employment

Since 2011	<b>Head</b> , Center for MR-Research, University Children's Hospital Zurich
2009-2011	<b>Senior Scientist</b> , Center for MR-Research, University Children's Hospital Zurich
2004-2009	<b>Principal Clinical Scientist (MRI)</b> , Department of Neuroradiology, King's College Hospital, London
1999-2004	<b>MRI Physicist</b> , Department of Neuroradiology, King's College Hospital, London
1998-1999	<b>Regional trainee in Medical Physics</b> , north Thames region, London, UK Rad
1995-1996	Teaching and research assistant, Physics Department, Williams College, MA, USA

### Publications

- Michels L, Warnock G, Buck A, **O'Gorman R**, Macaуда G, Riese F, Hock C, Kollias S, Meyer R, Kaelin A, Gietl A. Beta amyloid load and apolipoprotein E genotype alter local and global cerebral perfusion in amnesic mild cognitive impairment. In press, *Journal of Cerebral Blood Flow and Metabolism*.
- Ghisleni C, Bollmann S, BIASON-LaubER A, Poil SS, Brandeis D, Martin E, Michels L, Hersberger M, Suckling J, Klaver P, **O'Gorman RL**. Effects of Steroid Hormones on Sex Differences in Cerebral Perfusion. *PLoS One*. 2015 Sep 10;10(9):e0135827.
- Bollmann S, Ghisleni C, Poil SS, Martin E, Ball J, Eich-Höchli D, Edden RA, Klaver P, Michels L, Brandeis D, **O'Gorman RL**. Developmental changes in gamma-aminobutyric acid levels in attention-deficit/hyperactivity disorder. *Transl Psychiatry*. 2015 Jun 23;5:e589.
- Ghisleni C, Bollmann S, Poil SS, Brandeis D, Martin E, Michels L, **O'Gorman RL**, Klaver P. Subcortical glutamate mediates the reduction of short-range functional connectivity with age in a developmental cohort. *J Neurosci*. 2015 Jun 3;35(22):8433-41.
- O'Gorman RL**, Bucher HU, Held U, Koller BM, Hüppi PS, Hagmann CF; Swiss EPO Neuroprotection Trial Group. Tract-based spatial statistics to assess the neuroprotective effect of early erythropoietin on white matter development in preterm infants. *Brain*. 2015 Feb;138(Pt 2):388-97.
- Coluccia D, Fandino F, Schwyzer L, **O'Gorman R**, Remonda L, Anon J, Martin E, Werner B. First noninvasive thermal ablation of a brain tumor with MR-guided focused ultrasound. *Journal of Therapeutic Ultrasound* 2014, 2:17.
- Michels L, Schulte-Vels T, Schick M, **O'Gorman RL**, Zeffiro T, Hasler G, Mueller-Pfeiffer C. Prefrontal GABA and glutathione imbalance in posttraumatic stress disorder: Preliminary findings. *Psychiatry Res*. 2014 Dec 30;224(3):288-95.
- Riese F, Gietl A, Zölch N, Henning A, **O'Gorman R**, Kälin AM, Leh SE, Buck A, Warnock G, Edden RA, Luechinger R, Hock C, Kollias S, Michels L. Posterior cingulate  $\gamma$ -aminobutyric acid and glutamate/glutamine are reduced in amnesic mild cognitive impairment and are unrelated to amyloid deposition and apolipoprotein E genotype. *Neurobiol Aging*. 2014 Jul 29.
- Lustenberger C, **O'Gorman RL**, Pugin F, Tüshaus L, Wehrle F, Achermann P, Huber R. Sleep Spindles Are Related to Schizotypal Personality Traits and Thalamic Glutamine/Glutamate in Healthy Subjects. *Schizophr Bull*. 2014 Jul 29.
- Egerton A, Stone JM, Chaddock CA, Barker GJ, Bonoldi I, Howard RM, Merritt K, Allen P, Howes OD, Murray RM, McLean MA, Lythgoe DJ, **O'Gorman RL**, McGuire PK. Relationship Between Brain Glutamate Levels and Clinical Outcome in Individuals at Ultra High Risk of Psychosis. *Neuropsychopharmacology*. 2014 Jun 11.

- Maltezos S, Horder J, Coghlan S, Skirrow C, **O'Gorman R**, Lavender TJ, Mendez MA, Mehta M, Daly E, Xenitidis K, Paliokosta E, Spain D, Pitts M, Asherson P, Lythgoe DJ, Barker GJ, Murphy DG. Glutamate/glutamine and neuronal integrity in adults with ADHD: a proton MRS study. *Transl Psychiatry*. 2014 Mar 18;4:e373.
- Chowdhury FA, **O'Gorman RL**, Nashef L, Elwes RD, Edden RA, Murdoch JB, Barker GJ, Richardson MP. Investigation of glutamine and GABA levels in patients with idiopathic generalized epilepsy using MEGAPRESS. *J Magn Reson Imaging*. 2014 Mar 3.
- Mueller-Pfeiffer C, Schick M, Schulte-Vels T, **O'Gorman R**, Michels L, Martin-Soelch C, Blair JR, Rufer M, Schnyder U, Zeffiro T, Hasler G. Atypical visual processing in posttraumatic stress disorder. *Neuroimage Clin*. 2013 Aug 29;3:531-8.
- Goetti R, Warnock G, Kuhn FP, Guggenberger R, **O'Gorman R**, Buck A, Khan N, Scheer I. Quantitative Cerebral Perfusion Imaging in Children and Young Adults with Moyamoya Disease: Comparison of Arterial Spin-Labeling-MRI and H<sub>2</sub>[15O]-PET. *AJNR Am J Neuroradiol*. 2014 May;35(5):1022-8
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- Mueller-Pfeiffer C, Zeffiro T, **O'Gorman R**, Michels L, Baumann P, Wood N, Spring J, Rufer M, Pitman RK, Orr SP. Cortical and cerebellar modulation of autonomic responses to loud sounds. *Psychophysiology*. 2014 Jan;51(1):60-9.
- Horder J, Lavender T, Mendez MA, **O'Gorman R**, Daly E, Craig MC, Lythgoe DJ, Barker GJ, Murphy DG. Reduced subcortical glutamate/glutamine in adults with autism spectrum disorders: a [<sup>1</sup>H]MRS study. *Transl Psychiatry*. 2013 Jul 9;3:e279.
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- Goetti R, **O'Gorman R**, Khan N, Kellenberger CJ, Scheer I. Arterial spin labelling MRI for assessment of cerebral perfusion in children with moyamoya disease: comparison with dynamic susceptibility contrast MRI. *Neuroradiology*. 2013 May;55(5):639-47.
- Mullins PG, McGonigle DJ, **O'Gorman RL**, Puts NA, Vidyasagar R, 1st Cardiff Symposium on GABA, CJ Evans, RA Edden. Current Practice in the use of MEGA-PRESS spectroscopy for the detection of GABA. *Neuroimage*. 2014 Feb 1;86:43-52.
- O'Gorman RL**, Poil SS, Brandeis D, Klaver P, Bollmann S, Ghisleni C, Lüchinger R, Martin E, Shankaranarayanan A, Alsop DC, Michels L. Coupling between resting cerebral perfusion and EEG. *Brain Topogr*. 2013 Jul;26(3):442-57.
- Sztrihá LK, **O'Gorman RL**, MODO M, Barker GJ, Williams SC, Kalra L. Monitoring brain repair in stroke using advanced magnetic resonance imaging. *Stroke*. 2012 Nov;43(11):3124-31.
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- Michels L, Martin E, Klaver P, Edden R, Zelaya F, Lythgoe DJ, Lüchinger R, Brandeis D, **O'Gorman RL**. Frontal GABA levels change during working memory. *PLoS One*. 2012;7(4):e31933.



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- O'Gorman RL**, Jarosz J, Samuel M, Clough C, Selway RP, Ashkan K. CT/MR fusion in the post-operative assessment of electrodes implanted for deep brain stimulation. *Stereotact Funct Neurosurg* 2009 87:205-210.
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## Book Chapters

2015

- Ruth O'Gorman Tuura** and Stephen Keevil (in preparation) MRS Acquisition: Localisation, Optimisation, and Quality Assurance. In: *Clinical MR Spectroscopy* Ed: Jonathan McNulty and Paul Mullins. Springer Inc.

## Awards

2014

- Andres-Giedion Preis**, Schweizerische Gesellschaft für Radiologie