

UZAY EMRAH EMİR

Oxford Centre for Functional MRI of the Brain (FMRIB)
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EDUCATION

2003-2008

**Ph.D. in The Institute of Biomedical Engineering,
Boğaziçi University, Istanbul.**

- *Specialization in fMRI and other neuroimaging techniques (EEG, fNIRS and DTI)*
- *Advanced Medical Image Processing Techniques (Non-rigid registration methods, anisotropic nonlinear diffusion filters)*
- *MR Pulse Sequence Development (ASL and DW-EPI sequences) for Siemens Scanners*
- *Modeling of Biological Systems (Balloon Model for BOLD signal and an integrated model for melanocyte-specific gene expression and melanogenesis)*

2002-2003

**M.Sc. in The Institute of Biomedical Engineering
Boğaziçi University, Istanbul.**

- *Development of a functional near infrared spectroscopy (fNIRS) device, NIROSCOPE.*

1996-2001

**B.Sc. in Electrical and Electronics Engineering,
Ege University, Izmir.**

- *Development of a low cost, high input impedance, high common mode rejection ratio and fixed gain biopotential amplifier*

ACADEMIC APPOINTMENTS

2013-Present

**Head of Magnetic Resonance Spectroscopy, FMRIB Centre,
University of Oxford**

- *Directing FMRIB Centre's in vivo MRS program*
- *Development of reliable methods for*
 - *Quantitative imaging of molecular biomarkers for brain tumors, stroke, neurodegenerative diseases and neuropsychiatric disorders on 3T and 7T scanners*
 - *MRS-guided drug discovery for psychiatric disorders (e.g. interferon, lithium mimetic drugs) and cancers (e.g. monitoring Doxorubicin release in liver)*
 - *Monitoring neurotransmitters in response to physiological interventions (e.g. plasticity, pain and transcranial direct current stimulation)*

2008-2013

**Research Associate, Center for Magnetic Resonance Research,
University of Minnesota**

- *Development and optimization of pulse sequences and analysis tools to support clinical and translational spectroscopy research on 3T and 7T Siemens scanners.*
- *Applying edited MRS to quantify Ascorbate and Glutathione concentrations in order to provide an insight into the association between age-related neurodegeneration and oxidative stress.*

2002-2008

**Research Assistant, The Institute of Biomedical Engineering,
Boğaziçi University, Istanbul.**

FURTHER PROFESSIONAL ACTIVITIES

- *Membership of The International Society for Magnetic Resonance in Medicine.*
- *Secretary-Elect of the Psychiatric MR Spectroscopy and Imaging Study Group (2014-2016).*
- *Reviewer for scientific journals (JMRI, MRM, PLoS ONE).*

HONORS AND AWARDS

- *Honor Student (Necmi Tanyolaç Award), Boğaziçi University, Istanbul.*
- ***Outstanding Teacher Award, MR Spectroscopy & Spectroscopic Imaging course of the ISMRM 2012 Melbourne meeting***

SPECIAL TRAININGS

July 2005-October 2005

Intern, Laboratory of Brain and Cognition (LBC) at National Institute Of Mental Health (NIMH), Bethesda, USA.

- *High Resolution Retinotopy and development of a standardized mapping procedure.*

December 2006-March 2007

Intern, Max Planck Institute (MPI) for Biological Cybernetics Dept. Uгурbil, Tubingen, Germany.

- *Investigation of BOLD signal transients*

SUPERVISION

DPhil students

Clark Lemke University of Oxford, 2013–Present.

Adam Berrington University of Oxford, 2013–Present.

PEER REVIEWED PUBLICATIONS

Book Sections

1. UE Emir, G Öz (2013) MRS in Parkinson. In MRI imaging in Movement Disorders. Cambridge Press.

Published Journal Papers

1. N Singh, UE Emir et al. (2015) Effect of the putative lithium mimetic ebselen on brain myo-inositol, sleep and emotional processing in humans. In Neuropsychopharmacology.
2. M. Terpstra, UE Emir et al. (2015) Test-retest reproducibility of neurochemical profiles with short-echo, single-voxel MR spectroscopy at 3T and 7T., In Magnetic Resonance in Medicine.
3. GSL Coullon, UE Emir et al. (2015) Neurochemical changes in the pericalcarine cortex in congenital blindness attributable to bilateral anophthalmia., 1725-1733. Journal of neurophysiology 114.
4. UE Emir, C Schofield et al. (2015) Non-invasive quantification of 2-hydroxyglutarate in human gliomas with IDH1 and IDH2 mutations. In Cancer Research.
5. C Lemke, A Hess, S Clare, V Bachtiar, C Stagg, P Jezzard, U Emir (2015) Two-Voxel Spectroscopy With Dynamic B0 Shimming and Flip Angle Adjustment at 7 Tesla in the Human Motor Cortex., 852–860. In NMR in biomedicine 28.
6. C Lunghi, UE Emir, MC Morrone, H Bridge (2015) Short-term monocular deprivation alters GABA in the adult human visual cortex., 1496–1501. In Current Biology 25 (11).
7. B van de Bank, UE Emir, V Boer, J Wijnen et al. (2015) Multi-center reproducibility of neurochemical profiles in the human brain at 7 Tesla., 306-316 In NMR in biomedicine 28.
8. IM Adanyeguh, PG Henry, TM Nguyen, UE Emir et al. (2015) In vivo neurometabolic profiling in patients with spinocerebellar ataxia types 1, 2, 3, and 7., 662-670. In Movement Disorders 30.
9. P Bednařík, I Tkáč, F Giove, M DiNuzzo, DK Deelchand, UE Emir et al. (2015) Neurochemical and BOLD responses during neuronal activation measured in the human visual cortex at 7 Tesla., 601-610. In Journal of Cerebral Blood Flow & Metabolism 35.
10. P Bednařík, A Moheet, DK Deelchand, UE Emir et al. (2015) Feasibility and Reproducibility of Neurochemical Profile Quantification in the Human Hippocampus at 3T., 685–693. In NMR in biomedicine 28.
11. G Öz, JR Alger, PB Barker, UE Emir et al. (2014) Clinical Proton MR Spectroscopy in Central Nervous System Disorders., 658-679. In Radiology 270 (3).
12. A Moheet, UE Emir, M Terpstra, A Kumar, LE Eberly et al. (2014) Initial experience with seven tesla magnetic resonance spectroscopy of hypothalamic GABA during hyperinsulinemic euglycemia and hypoglycemia in healthy humans., 12-18. In Magnetic Resonance in Medicine 71 (1).

13. DK Deelchand, IM Adanyeguh, UE Emir et al. (2014) Two-site reproducibility of cerebellar and brainstem neurochemical profiles with short-echo, single voxel MRS at 3T. In *Magnetic Resonance in Medicine*.
14. UE Emir, H Brent Clark, ML Vollmers, LE Eberly, G Öz (2013) Non-invasive detection of neurochemical changes prior to overt pathology in a mouse model of spinocerebellar ataxia type 1., 660-668. In *Journal of neurochemistry* 127 (5).
15. M Marjańska, UE Emir, DK Deelchand, M Terpstra (2013) Faster Metabolite 1H Transverse Relaxation in the Elder Human Brain., e77572. In *PLoS ONE* 8 (10).
16. UE Emir, PJ Tuite, G Öz (2012) Elevated Pontine and Putamenal GABA Levels in Mild-Moderate Parkinson Disease Detected by 7 Tesla Proton MRS, e30918. In *PLoS ONE* 7 (1).
17. UE Emir, EJ Auerbach, PF Van De Moortele et al. (2012) Regional neurochemical profiles in the human brain measured by (1) H MRS at 7 T using local B(1) shimming., 152-60. In *NMR in biomedicine* 25 (1).
18. UE Emir, S Raatz, S McPherson et al. (2011) Noninvasive quantification of ascorbate and glutathione concentration in the elderly human brain., 888-94. In *NMR in biomedicine* 24 (7).
19. M Terpstra, C Torkelson, UE Emir et al. (2011) Noninvasive quantification of human brain antioxidant concentrations after an intravenous bolus of vitamin C., 521-8. In *NMR in biomedicine* 24 (5).
20. UE Emir, D Deelchand, PG Henry et al. (2011) Noninvasive quantification of T2 and concentrations of ascorbate and glutathione in the human brain from the same double-edited spectra., 263-9. In *NMR in biomedicine* 24 (3).
21. AA Shestov, UE Emir, A Kumar et al. (2011) Simultaneous Measurement Of Glucose Transport And Utilization In The Human Brain., E1040-1049. In *American journal of physiology. Endocrinology and metabolism* 301 (5).
22. UE Emir, Z Bayraktaroglu, C Ozturk et al. (2008) Changes in BOLD transients with visual stimuli across 1-44 Hz., 185-8. In *Neuroscience letters* 436 (2).
23. UE Emir, C Ozturk, A Akin (2008) Multimodal investigation of fMRI and fNIRS derived breath hold BOLD signals with an expanded balloon model., 49-63. In *Physiological measurement* 29 (1).
24. A Akin, D Bilensoy, UE Emir et al. (2006) Cerebrovascular dynamics in patients with migraine: near-infrared spectroscopy study., 86-91. In *Neuroscience letters* 400 (1-2).
25. UE Emir, IA Kurnaz (2003) An integrated model for melanocyte-specific gene expression and melanogenesis, 209-217. In *Signal Transduction* 3 (56).