

Imaging Symposium

Date: Tuesday, 28 March 2017

Venue: Teaching & Learning Centre,
Queen Elizabeth University Hospital



Biographies



Professor Siegfried Trattnig

Prof. Dr. Siegfried Trattnig graduated from the University of Vienna Medical School in 1985. He trained in Radiology and subsequently served as Assistant Medical Director and Acting Medical Director for the Section of Neuroradiology in the Department of Radiology, Medical University of Vienna. He was appointed as an Associate Professor in Radiology 1993 becoming the Acting Medical Director at the Clinical Magnetic Resonance Institute at the University of Vienna. Since 2003 Prof Trattnig has the position of the Medical Director of the Centre of Excellence in high-field MR at the Medical University of Vienna. In 2010 he was appointed as a full Professor for Radiology with special focus on High field MR. Prof.

Trattnig has pioneered the field of multi parametric or biochemical MR imaging of cartilage. He is currently the lead researcher on the clinical 7T & 3T projects at the Medical University in Vienna. Based on the results of clinical comparison studies between 3 and 7T his Center of Excellence for High Field MR was appointed as the international Reference Center for 7 Tesla by Siemens Healthcare, the leading vendor in the ultra-high field MR. He is editorial board member of 8 scientific journals, member of 35 committees and working groups within the ISMRM, ESR, ESMRMB and the ICRS among the Executive Board member of the ESMRMB, member of the ESR Research Committee Board and Chairperson of the ESR European Imaging Biomarker Alliance (EIBALL) and Director of the School of MRI of the ESMRMB. He is an author of 452 articles in peer reviewed scientific journals and contributed to 25 scientific books. Additionally he has held 26 peer reviewed scientific grants with a total of funding money of 13.5 Mio €, received 12 scientific awards and is a reviewer for 35 scientific journals.

Professor Thoralf Niendorf

Prof. Thoralf Niendorf is a PhD who graduated from the University of Bremen, Germany. He was postdoctoral fellow at the Max-Planck-Institute for Cognitive Neuroscience, Leipzig, Germany. He advanced his career within corporate research (General Electric). Thoralf received appointments for professorships or leadership positions from the Queensland University of Technology, Brisbane,



Australia; the University of Ulm, Germany; the Twente University, Enschede, The Netherlands; the Technical University of Aachen, Germany and from A*STAR Singapore. He is professor and chair for Experimental Ultrahigh Field Magnetic Resonance (UHF-MR) at the Charité, Berlin, Germany and concurrently head of the Berlin Ultrahigh Field Facility (B.U.F.F.) at the Max Delbrück Center for Molecular Medicine, Berlin, Germany. He takes a bold approach for high risk/high gain research into new ways of unlocking the diagnostic and therapeutic potential of UHF-MR and pushes the boundaries towards extreme field MR. His role as a founder/CEO of MRI.TOOLS GmbH, Berlin, Germany (provides RF coils, MR hardware, accessories and services tailored for UHF-MR) is another testament to his ambition for translation. An enthusiastic supporter of international collaboration and a promoter of multi-disciplinary sciences, he particularly values the dialogue between basic scientists and clinicians and is a proud admirer of the Imaging Center of Excellence, Glasgow, Scotland, UK.



Dr Alexander Radbruch

Dr. Alexander Radbruch MD, JD is a Senior Attending Radiologist and Head of Neuro-oncologic Imaging at the German Cancer Research Center in Heidelberg. He studied Medicine and Law at the University of Heidelberg, Munich and the Baylor College of Medicine in Houston. Since 2012 he has been leading an interdisciplinary research group on brain tumour imaging at the German Cancer Research Center at the University of Heidelberg, Department of Neuroradiology. His research focus is on advanced MR imaging

methods, MR contrast agents, neuroradiology and ultra-high field MRI. He has published several studies on glioblastoma imaging at 7 Tesla and was among the first researchers who assessed new MRI sequences such as the chemical exchange saturated transfer imaging in brain tumour patients at ultra-high field MRI. Recently, Radbruch was in the center of the debate of gadolinium depositions in the brain since he showed in several studies that gadolinium deposition following serial injections of gadolinium based contrast agents is primarily caused by linear and not by macrocyclic agents.

Professor Robert Turner

Prof. Robert Turner played a key role in the invention of actively shielded gradient coils used widely in MRI, in the development of diffusion weighted imaging of human brain, and in the discovery of functional MRI by measurement of the effects of blood oxygenation changes. As a Max-Planck Institute Director in Leipzig, Germany, he worked on the creation of native cortical anatomical maps of individual living human brains using ultra-high field MRI. He studied maths and physics at Cornell University and completed his doctorate in physics at Simon Fraser University, Vancouver. As a lecturer at Nottingham University from 1984 until 1988, he built his own MRI scanner, and designed and built gradient coils for MRI. Between 1988 and 1994 he was a Visiting Scientist at NIH. He then became a Wellcome Principal Research Fellow at the Functional Imaging Laboratory of the Institute of Neurology in London. He has published over 300 scientific papers in a broad range of disciplines. Currently he is Emeritus Director at the Max-Planck-Institute for Human Cognitive and Brain Sciences, Leipzig, Honorary Professor in the Physics Department, University of Nottingham, and Professor by special appointment in the Faculty of Medicine, University of Amsterdam.



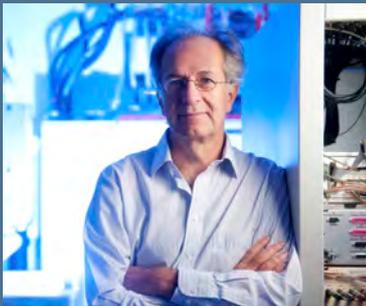
Dr Christina Triantafyllou

Dr. Christina Triantafyllou (Director of Global UHF Product Relationship Management at Siemens Healthineers) joined Siemens in Sept 2012 to lead the UHF product relationship management segment in the Department of MR Technology and Research systems, MR. Prior to joining Siemens, Dr Triantafyllou was working in academic research as faculty member of Harvard Medical School and was the Head of MRI Physics and the Associate Director of the Imaging Centre at Brain and

Cognitive department at Massachusetts Institute of Technology (MIT, Boston, USA). The main focus of her research was methods development for high resolution fMRI brain imaging as well as clinical research applications at 7T. In her current role at Siemens Healthineers, she is responsible for product definition and innovation, business management and collaboration for UHF projects and research systems.

Dr David Porter

Dr. David Porter is a physicist, originally from London, specialising in magnetic resonance imaging (MRI). He holds a B.Sc. degree in physics from Sheffield University and a Ph.D. from King's College London for work on magnetic resonance spectroscopy of human tumours in vivo. He worked as a post-doctoral scientist at Great Ormond Street Hospital in London, developing MRI methods for the study of epilepsy and acute stroke in children. He had a long career in industry working for Siemens Healthcare in the UK and Germany, where he supported research collaborations with universities around the world and developed novel techniques for Siemens MRI scanners. During his time at Siemens, he focused on neurology topics and, in particular on diffusion-weighted imaging (DWI). David is currently working on motion correction and fast scanning methods at The Fraunhofer MEVIS Institute for Medical Image Computing in Bremen and he will join The University of Glasgow during 2017 as a Professor in Magnetic Resonance Imaging Physics.



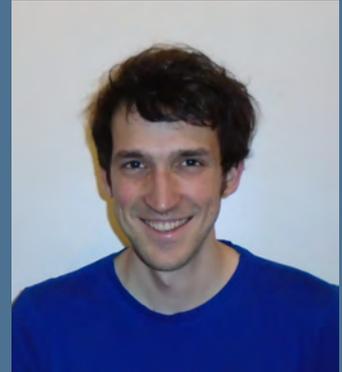
Professor Kamil Ugurbil

Prof. Kamil Ugurbil currently holds the McKnight Presidential Endowed Chair Professorship in Radiology, Neurosciences, and Medicine and is the Director of the Center for Magnetic Resonance Research (CMRR) at the University of Minnesota. Prof. Ugurbil was educated at Robert Academy, Istanbul (high school) and Columbia University, New York, N.Y. After completing his B.A. and Ph.D. degrees in physics, and chemical physics, respectively, at Columbia, he joined AT&T Bell Laboratories in 1977, and subsequently returned to Columbia as a faculty member in 1979. He was recruited to the University of Minnesota in 1982 where his research in magnetic resonance led to the evolution of his laboratory into an interdepartmental and interdisciplinary research center, the CMRR.

The work that introduced magnetic resonance imaging of neuronal activity in the human brain (known as fMRI) was accomplished independently and simultaneously in two laboratories, one of which was Ugurbil's in CMRR. Since then, his primary focus has been the development and application of methods capable of obtaining high resolution and high accuracy functional and anatomical information in the human brain, targeting spatial scales ranging from the whole brain to elementary neuronal ensembles exemplified by cortical columns and layers. This body of work has culminated in unique accomplishments, such as the first time imaging of orientation columns in the human primary visual cortex, and involved the development of numerous new instruments and image acquisition approaches, including the introduction and development of ultrahigh magnetic fields (7 Tesla and higher) for functional and anatomical imaging. This body of work was recognized by several awards and honors.

Dr Laurentius Huber

Dr. Laurentius Huber is a physicist by training and gained his first research experience in the Higgs-particle hunt at CERN and the Ludwig-Maximilians-University in Munich. During his PhD project at the Max-Planck Institute in Leipzig, he worked on 7T MRI sequences for non-invasively measuring changes of cerebral blood volume. After receiving his PhD in 2015, he started working with Peter Bandettini at the NIH in Bethesda, USA. Altogether he has had the luxury of spending more than 1500 hours at the console of a 7T MRI scanner. His work in 7T focuses on method development to push the spatial resolution and specificity to map brain activity changes at the fine scale of cortical layers and columns.



Professor Rainer Goebel

Prof. Rainer Goebel studied cognitive psychology and computer science in Marburg, Germany (1983-1988) and completed his PhD in 1994 (Braunschweig, Germany). In 1993 he received the Heinz Maier Leibnitz Advancement award and in 1994 he received the Heinz Billing award from the Max Planck society. From 1995-1999 he was a postdoctoral fellow at the Max Planck Institute for Brain Research in Frankfurt/Main. Since January 2000, Goebel is full professor for Cognitive Neuroscience at Maastricht University. He is founding director of the Maastricht Brain Imaging Centre and the driving force of the recently established ultra-high field imaging center housing 3, 7 and 9.4 Tesla scanners. Since 2008 he is also team leader of the "Modeling and Neuroimaging" group at the Netherlands Institute for Neuroscience. He is also founder of the company "Brain Innovation BV". In 2014 Goebel has been selected as member of the Royal Netherlands Academy of Arts and Sciences.

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Schedule

09:00	<i>Coffee and Registration</i>	
09:30	Keith Muir	<u>Translational MR: Brain-small Vessels, Stroke and Recovery</u>
09:40	Siegfried Trattnig	Ultra High Field MR (7T) in MSK Imaging
10:10	Thoralf Niendorf	Cardiac Magnetic Resonance at 7T - Taking the High Road
10:40	Alexander Radbruch	Neuro-oncologic Imaging at 7T
11:10	<i>Tea/Coffee</i>	
11:30	Joziën Goense	<u>MRI Physics - At High Magnetic Field</u>
11:45	Robert Turner	7T MRI: A Game-changer for Imaging Neuroscience
12:25	Christina Triantafyllou	Ultra High Fields, Ultra-small Voxels for Microscoping Imaging
12:45	<i>Lunch</i>	
13:45	David Porter	Advances in Magnetic Resonance Imaging: Motion Correction and Scan-time Reduction
14:05	Kamil Urgubil	Neuroimaging with Ultra High Field MRI: Where we are and where do we go from here
14:25	Lars Muckli	<u>Brain and Cognition</u>
14:40	Laurentius Huber	Pushing the Resolution of 7T fMRI: What layer-dependent blood volume fMRI can tell us about brain function
15:00	<i>Tea/Coffee</i>	
15:20	Rainer Goebel	Imaging Cortical Columns and Cortical Layers At Ultra High Magnetic Fields: methods and application
16:00	<i>Closing Remarks</i>	