

Lectures on MR

European Multidisciplinary for excellence in teaching
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ESMRMB
European Society for Magnetic Resonance in Medicine and Biology

Programme

fMRI and optogenetics: Probing networks in the animal brain

June 25-27, 2014

Department of Clinical Radiology, Experimental Nuclear Magnetic Resonance

University of Muenster, 48149 Muenster, Germany

Course Venue: NBZ-Nano-Bioanalytik-Zentrum-Münster GmbH, Mendelstraße 17, 48149 Münster

Day 1: Wednesday, June 25, 2014

From 11:00	Arrival		
12:45-13:00	Welcome	Cornelius Faber / Albrecht Stroh	
	Session - Basics		
13:00-13:30	Basics of fMRI	Cornelius Faber	Münster (D)
13:30-14:30	Optogenetics	Albrecht Stroh	Mainz (D)
14:30-15:00	Coffee Break		
15:00-15:45	Basics of Neuronal Networks	Ute Lindauer	Aachen/ München (D)
15:45-16:30	Anesthesia	Lydia Wachsmuth	Münster (D)
16:30-17:00	Walk to Lecture Venue		
17:00-18:00	Restitution of structural and functional networks after brain disease: what can imaging teach us?"	Mathias Hoehn	Köln (D)
18:00-19:00	Lab Tour		
	Welcome Reception/Dinner		

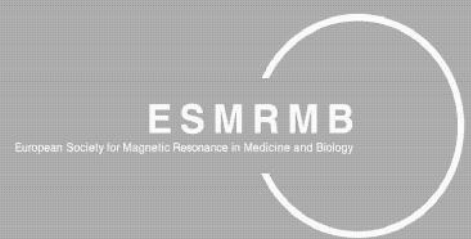
Day 2: Thursday, June 26, 2014

	Session - Methods		
09:00-09:45	Electrophysiology: Exploring electrical activity of living neurons	Thomas Budde	Münster (D)
09:45-10:30	Optical detection of neuronal activity	Miriam Schwalm	Mainz (D)
10:30-11:15	Neurovascular Coupling	Ute Lindauer	Aachen/ München (D)
11:15-11:45	Coffee break		
11:45-12:30	Statistics in neuroscience	Eduardo Rosales	Münster (D)
12:30-13:00	fMRI analysis	Florian Schmid	Münster (D)
13:00-14:00	Lunch		
14:00-14:30	fMRI Sequences	Cornelius Faber	Mainz (D)
14:30-15:15	Intrinsic functional connectivity MRI (fcMRI) in the awake mouse	Itamar Kahn	Haifa (IL)
15:15-15:45	MEMRI Animal Brain Mapping: local uptake vs. track tracing	Xin Yu	Tübingen (D)
15:45-17:30	Practical Aspects Session and Coffee Break		



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Day 3: Friday, June 27, 2014			
	Session - Applications		
09:00-09:40	Combining optogenetics with patch clamp: targeting specific cell populations	Maren Lange	Münster (D)
09:40-10:20	Targeting Projection Fibers for Optogenetics and fMRI: Is anti-dromic activity a concern?	Xin Yu	Tübingen (D)
10:20-11:00	Coffee break		
11:00-11:40	Linearity of the BOLD signal and brain-wide functional connectivity using optogenetic fMRI	Itamar Kahn	Haifa (IL)
11:40-12:20	Bridging the gap: Combining optogenetics, fMRI, and optical recordings of neuronal activity	Albrecht Stroh	Mainz (D)
12:20-13:00	Practical Aspects, Q&A with Speakers		
13:00-13:30	Lunch		
13:30	Interactive Evaluation	Cornelius Faber	Münster (D)

