



## Program: International Conference BrainLinks-BrainTools

June 28 to 30, 2017

Venue: Forum Merzhausen, Merzhausen

Wednesday, June 28

*Chair*

8:30 - 9:30	Registration	
9:30 - 9:45	Opening	Wolfram Burgard
<b>Session 1: Functional and Structural Connectivity</b>		Michael Tangermann
9:45 - 10:10	Invited session talk: Optogenetic Functional Magnetic Resonance Imaging and the Investigation of Global Brain Circuit Mechanisms, Jin Hyung Lee	
10:10 - 10:25	Modulation of Structural and Functional Connectivity in Mouse Brain Observed by MR, Jürgen Hennig	
10:25 - 10:40	Structural and Functional Reorganization of the Hippocampal Network in Epilepsy, Carola Haas	
10:40 - 10:55	Inferring Functional Networks from BOLD-Related Signals, Stefan Rotter	
10:55 - 11:25	Break	
<b>Session 2: Bidirectional Interaction with the Brain</b>		Ilka Diester
11:25 - 11:50	Invited session talk: Neural Interfaces for Controlling Finger Movements, Cynthia Chestek	
11:50 - 12:05	A Toolbox for Chronic Optophysiological Experiments in Freely Moving Rodents, Ilka Diester	
12:05 - 12:20	Autonomous Optimization of Targeted Stimulation of Neuronal Networks, Uli Egert	
12:20 - 12:35	<b>Welcome by rector of the University of Freiburg</b>	Wolfram Burgard
12:35 - 13:35	Lunch	
<b>Session 3: Human-Device Interaction</b>		Bernhard Nebel
13:35 - 14:25	<b>Keynote Lecture: Learning and adaptation in artificial neural networks for the control of robots, Florentin Wörgötter</b>	
14:25 - 14:40	Deep Learning for 3D Vision, Thomas Brox	
14:40 - 14:55	Deep Learning with Convolutional Neural Networks for Brain Mapping and Interfacing, Tonio Ball	
14:55 - 15:10	Perception and Learning for an Autonomous Brain-Controlled Mobile Manipulation Robot, Wolfram Burgard	
15:10 - 15:25	<i>Group picture</i>	
15:25 - 17:00	Poster session (BrainLinks-BrainTools)	
17:00 - 18:15	Panel discussion: Probe-Tissue Interaction on Long-Term Perspectives	Thomas Stieglitz
18:30	<i>Dinner by invitation</i>	



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Thursday, June 29

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Stefan Rotter

<b>Session 4: Interfacing with Intracortical Probes</b>		
9:30 - 9:45	Micro-Optical Tools with Integrated Light Sources to Interface the Brain, Patrick Ruther	
9:45 - 10:00	Long-Term Performance of Flexible Thin-Film Electrode Arrays in Neural Implants, Thomas Stieglitz	
10:00 - 10:25	Invited session talk 4 Bill Shain	
10:25 - 10:55	Break	
10:55 - 11:45	<b>Keynote Lecture: Local Circuit Perturbation Analysis Need Appropriate Tools, György Buzsáki</b>	Marlene Bartos
11:45 - 12:00	Distance-Dependent Inhibition Facilitates Focality of Gamma Oscillations in the Dentate Gyrus, Marlene Bartos	
<b>Session 5: Clinical Applications</b>		
12:00 - 12:15	Anatomical Constraints for Compensation After Stroke, Cornelius Weiller	
12:15 - 12:30	The Clinical Promise of Neuromodulation of Reward Processing, Thomas Schläpfer	
12:30 - 12:45	Progress Towards Closed-Loop Interventions in Epilepsy, Andreas Schulze-Bonhage	
12:45 - 13:45	Lunch	
<b>Session: International Conference for Advanced Neurotechnology (ICAN)</b>		
13:45 - 13:55	Welcome	Oliver Paul
13:55 - 14:15	International Partnership for Advancement of Neurotechnology: Challenges and Future, Euisik Yoon (UM)	
14:15 - 14:30	Introducing the Brain Science Institute of KIST, Uhtaek Oh (KIST)	
14:30 - 15:00	Anisotropically Organized Three-Dimensional Culture Platform for Reconstruction of Hippocampal Neural Network, Dr. Nakwon Choi (KIST)	
15:00 - 15:30	Spike Sorting for Next Generation Electrode Arrays, Kenneth Harris (UCL)	
15:30 - 16:00	Distributed Neuronal Populations Supporting Vision, Action, and Reward across the Mouse Brain, Nick Steinmetz (UCL)	
16:00 - 16:15	Break	
16:15 - 16:45	Cognitive Ontogeny in Health and Mental Illness: a Story of Right Communication, Ileana Hanganu-Opatz (University of Hamburg)	Euisik Yoon
16:45 - 17:15	Regulation of Brain Activity by Brain State, Brendon Watson (NYU)	
17:15 - 17:45	Advances and Challenges in Optoelectrode Systems, John Seymour (UM)	
17:45 - 18:15	Slow Wave Sleep Oscillations Coordinate Neural Ensembles during Memory Consolidation, Sara Aton (UM)	
18:15 - 19:15	Poster session (ICAN)	John Seymour
19:15	<i>Dinner (BrainLinks-BrainTools and ICAN) location at conference venue</i>	

## Program: International Conference BrainLinks-BrainTools

Friday, June 30

*Chair*

<b>Session 6: Ethics and Outreach</b>		Bernhard Nebel
9:15 - 9:40	Invited session talk: Research Neuroscientists as Science Communicators: Challenges and Opportunities, Eric Chudler (CSNE)	
9:40 - 9:55	Ethical Reflection on Neurotechnology and New Public Engagement Formats, Oliver Müller	
9:55 - 10:45	<b>Keynote Lecture: Achieving a Bionic Interface to Overcome Paralysis, John Donoghue</b>	
10:45 - 11:15	Break	
<b>Session 7: Implant Development</b>		Maria Asplund
11:15 - 12:05	<b>Keynote Lecture: The Challenge of Integrating High Density Recording Arrays into Brain Tissue, Patrick Tresco</b>	
12:05 - 12:20	Silicon-Based Neural Probes for Minimally Invasive Neuroscience, Oliver Paul	
12:20 - 12:35	Tailor Made Electrode Surfaces for Long-Term Stable Intracortical Probes, Maria Asplund	
12:35 - 12:50	Non-Diffracting Light Beams for Optogenetics, Ulrike Wallrabe	
12:50 - 12:55	Closing remarks	Wolfram Burgard
12:55 - 14:00	Lunch	
14:00	<i>guided Lab tour on invitation</i>	