

**European Society for Magnetic Resonance in Medicine and Biology
Workshop/
International Society for Magnetic Resonance in Medicine
Endorsed Workshop**

**MRI of Neuromodulation:
Target Engagement, Neural Mechanism, and Biomarker Development**

Altes AKH, Universität Wien,
Vienna, **Austria**
07-09th April 2026

SCIENTIFIC ORGANIZING COMMITTEE

Lucia Navarro de Lara, PhD	Martinos Center/MGH, MA, USA (Co-Chair)
Dogu Baran Aydogan, PhD	University of Eastern Finland, Finland (Co-Chair)
Danny JJ Wang, PhD	University of Southern California, CA USA (Co-Chair)
Martin Tik, PhD	Medical University of Vienna, Austria (host, Co-Chair)
Juliana Huang, PhD	West China Hospital of Sichuan University, China
Limin Chen, PhD	Vanderbilt University, TN, USA
Sina Straub, PhD	University of Bern, Switzerland
Hamed Ekhtiari MD PhD	University of Texas Southwestern, TX USA
Patricia Figueiredo, PhD	Instituto Superior Técnico, ULisboa, Portugal

TENTATIVE PROGRAM

DAY ONE

07:30 – 08:15

Registration

08:00 – 08:10

Welcome address and remarks by Organizing Committee and Local Hosts

08:15 – 09:45
(1.5 hrs / 90 min)

SESSION 1 Drs. Xiaoqi (Julianna) Huang and TBD

ORAL

MRI for Neurophysiological Mechanism of Neuromodulation

(MRI with preclinical animal models to understand the mechanism of neuromodulation, focused on investigations of TMS, tFUS and/or optical stimulation and TES)

Neurophysiology of Brain Stimulation using TMS, Dr. Alex Opitz, Univ.of Minnesota, USA

Introduction to TUS, Dr. Kim Butts Pauly, Stanford, USA

Exploring mechanism of Brain stimulation with MRI, Dr. Qiyong Gong, West China Hospital of Sichuan University, China

09:45 – 10:15

coffee / light snack break

10:15 – 11:15

KEYNOTE SPEAKER

Prof. Hartwig Siebner.

Head of Research, Center for Functional and Diagnostic Imaging and Research (Includes DRCMR), Copenhagen University Hospital Hvidovre, Denmark

Clinical Professor with special focus on Precision Medicine, Faculty of Health and Medical Sciences, Institute of Clinical Medicine, University of Copenhagen, Denmark

Title: Charting Dose–Response Dynamics of Noninvasive Brain Stimulation in Humans

11:15 – 12:45
(1.5 hrs / 90 min)

SESSION 2 Dr. Christoph Juchem and TBD

ORAL

Safety in MRI of Neuromodulation

(RF heating, SAR and device interferences, etc., each talk focused on different methods... DBS, TMS/TES, tFUS)

MRI safety in DBS imaging: a clinical imaging perspective, Dr. Melanie Morrison, UCSF, USA

Safety of concurrent TMS/MRI, Dr. Lucia Navarro de Lara, MGH, USA

Practical Safety Considerations in MR-ARFI, Dr. David Norris, Radboud University, Netherlands

12:45 – 13:45

Lunch – Group photo

13:45 – 15:15
(1.5 hrs / 90 min)

SESSION 3 Dr. Lucia Navarro de Lara and TBD

ORAL

MRI in TMS

Integrating multichannel TMS and MRI for causal mapping of brain circuits: concepts, systems, and future trends, Dr. Aapo Nummenmaa, MGH, USA

Noninvasively engaging the hippocampus and human memory network, Dr. Molly Hermiller, Florida State University, USA

Concurrent TMS/fMRI in Psychiatry, Dr. Martin Tik, MUW, Austria

15:15 – 15:45 *coffee / light snack break*

15:45 – 17:45 **SESSION 4** TBD(moderators: TBN)

(2 hrs / 120 min)

POWER PITCH

Topic #1 (TBD)

pitch (5min)

pitch (5min)

pitch (5min)

Topic #2 (TBD)

pitch (5min)

pitch (5min)

pitch (5min)

Topic #3 (TBD)

pitch (5min)

pitch (5min)

pitch (5min)

Topic #4 (TBD)

pitch (5min)

pitch (5min)

pitch (5min)

FOLLOWED BY POSTER SESSION

Day 1 Adjournment

DAY TWO

07:30 – 08:00 *coffee / light snack*

08:00 – 09:30 **SESSION 5** (moderators: Dr. Sina Straub and Dr. Danny Wang)

(1.5 hrs / 90 min)

ORAL

MRI in Transcranial Electrical Stimulation (tES)

Deep Learning Applied to Phase Denoising, Current Density, and Conductivity Reconstruction using MRI., Dr. Rosalind Sadleir, Arizona State University, USA

Interactions between tDCS and MR imaging: MR current density imaging and relevance for functional MRI, Dr. Axel Thielscher, Danish Tech. Univ., Denmark

tES-fMRI Combination: From Offline and Concurrent Experiments to Closed-Loop Neuromodulation, Dr. Hamed Ekhtiari, UT Southwestern, USA

9:30 – 10:00 *coffee / light snack break*

10:00 – 11:00

KEYNOTE SPEAKER

Prof. Helen Mayberg

Founding director of Center for Advanced Circuit Therapeutics at the Icahn School of Medicine, NY, USA

Title: Putting Biomarkers to Practice to Optimize DBS for Depression

11:00 – 12:30
(1.5 hrs / 90 min)

SESSION 6 (moderators: TBN)

ORAL

MRI of implanted stimulation devices

Connectomic DBS for Psychiatric Disorders Dr. Ki Sueng Choi, Icahn School of Medicine, USA

Multi Modal MRI informed High Intensity Focused Ultrasound: From Precision Multi Modal Multi Modal MRI informed High Intensity Focused Ultrasound: From Precision Neuromodulation to Surgical Ablation, Dr. Bhavya R. Shah, UT Southwestern Medical Center, USA

Personalized Adaptive Cortical Electro-stimulation (PACE) for Treatment-resistant Depression, Dr. Ziad Nahas, University of Minnesota, USA

12:30 – 13:30

Lunch

13:30 – 15:00

SESSION 7 (moderators: TBN)

MRI in tFUS

The Role of MR-ARFI in Transcranial Focused Ultrasound: Principles and Applications, Dr. Morteza Mohammadjavadi, Standford, USA

Effects of Transcranial Ultrasound Stimulation (TUS) of S1 and VPL Nucleus of the Thalamus on Acute Pain Perception, Dr. Samuel Pichardo, Univ. of Calgary, Canada

tFUS Overview and Applications, BrainBox Ltd., UK

(2 hrs / 120 min)

ORAL

15:00 – 15:30

coffee / light snack break

15:30 – 17:30

SESSION 8 (moderators: TBN)

(2 hrs / 120 min)

POWER PITCH

Topic #1 (TBD)

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Topic #2 (TBD)

pitch (5min)

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Topic #3 (TBD)

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Topic #4 (TBD)
pitch (5min)
pitch (5min)
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FOLLOWED BY POSTER SESSION

Day 2 Adjournment
Dinner + Networking

1830 - 2200
DAY THREE

07:00 – 08:00 **Breakfast**

08:00 – 09:30 **SESSION 9** (moderators: TBN)
ORAL

Emerging Technologies and Applications

Concurrent Robotic TMS-EEG-fMRI System, Dr. Chunlei Liu, Berkeley University, USA
Neuromodulation of the vagal interoceptive system — Transcutaneous Vagus Nerve Stimulation, Dr. Mark Tittgemeyer, Max Plank Institute for Metabolism Research, Germany
Interleaved TMS-MRS: Real-Time Neurochemical Mapping During Transcranial Magnetic Stimulation Dr. Maria Vasileiadi, Sunnybrook Health Science Center, Canada

09:30 – 10:00 *coffee / light snack break*

10:00 – 11:00 **SESSION 10** (moderators: TBN)
ORAL

Brain-state/Closed-loop Applications of MRI in neuromodulation

Simultaneous fMRI and temporal interference electrical neurostimulation, Dr. Joshua Brown, Indiana University, USA
State-dependent TMS-(EEG)-fMRI in cognition, Dr. Inge Leunissen, Maastricht, Netherlands

11:00 – 12:00 **SESSION 11** (moderators: Dr. Danny Wang,)
Panel Discussion MRI Biomarker Development in Neuromodulation (Cross-neuromodulation Biomarkers)
(Academic-Industry partnership for biomarker, therapy optimization and new therapies discovery and development)

Academic representative – Dr. Desmond Oathes
Industry partner – TBD

12:00 – 12:30 **Future Directions + Open Discussion**

12:30-13:00 **Poster Awards Ceremony and Closing Remarks**

13:00

Day 3 Adjournment

13:00-18:00

Brainbox satellite tFUS sessions