



Biological Magnetic Resonance From Molecules to Patients

March 26-27, 2023

The David Lopatie Conference Centre
Weizmann Institute of Science



Sunday, March 26

8:30-8:55  **Registration and coffee**

8:55-9:00 **Opening words**
Lucio Frydman, Weizmann Institute of Science

9:00-10:35 Structural biology & small molecules
(chair: Phil Selenko)

9:00-9:35 **Christian Griesinger**, MPI-Goettingen
Small molecules interfering with aggregation important in neurodegeneration

9:35-10:10 **Rina Rosenzweig**, Weizmann Institute of Science
Uncovering the Role of DNAJB6 Chaperone Mutations in Myopathies

10:10-10:35 **Myeongkyu Kim**, MPI-Goettingen
Exploring binding site of MODAG-005 on α -Synuclein aggregates as a novel PET tracer

10:35-11:00  **Coffee Break**

11:00-12:50 MRI/MRS (chair: Susann Boretius)

11:00-11:35 **Michal Neeman** Weizmann Institute of Science
Unveiling the placenta: Structural & functional MRI as a path towards fixing a neglected organ

11:35-12:00 **Sonja Sternkopf**, MPI-Goettingen
Rapidly Signal-enhanced Metabolites for Atomic Scale Monitoring of Living Cells with Magnetic Resonance

12:00-12:25 **Lisa Fries**, MPI-Goettingen
Metabolic MRSI of Pancreatic and Colon Cancer with para-Hydrogen Hyperpolarized 1- 13 C Pyruvate

12:25-12:50 **Talia Harris**, Weizmann Institute of Science
Intelliwaste: Investigating metabolism of stem cells and brain organoids by ^1H and ^{13}C NMR of spent 1- ^{13}C glucose labeled media

12:50-14:45  **Lunch and tour of MR facilities (optional)**

14:45-16:20 Methods & Materials
(chair: Lucio Frydman)

14:45-15:20 **Stefan Glögger**, MPI-Goettingen
Nuclear Spin Singlet States in Biology and Biochemistry

15:20-15:55 **Daniel Jardon**, Weizmann Institute of Science
The Effect of Structural Disorder on Endogenous Metal Ions MAS-DNP

15:55-16:20 **Evgeny Nimerovsky**, MPI-Goettingen
New Selective Homonuclear Recoupling Methods

16:20-16:45  **Coffee Break**

16:45-18:10 EPR/ENDOR
(Chair: Marina Benatti)

16:45-17:10 **Annemarie Kehl**, MPI-Goettingen
Strategies for Frequencies and Time Domain Simulations of Pulsed ENDOR Experiments

17:10-17:35 **Andreas Meyer**, MPI-Goettingen
Studying Biomolecules with ^{19}F ENDOR

17:35-18:10 **Daniella Goldfarb**, Weizmann Institute of Science
Gd(III)- ^{19}F distance measurements of proteins in cells by electron-nuclear double resonance

18:15 **Poster session & Group photo**

9:00-10:25 BioNMR

(chair: Stefan Glöggler)

9:00-9:35 **Phil Selenko**, Weizmann Institute of Science
Opportunities & Challenges for In-Cell NMR Spectroscopy

9:35-10:00 **Jordan Chill**, Bar-Ilan University
Guiding rational design of SH3 ligands: Towards an efficient inhibitor of breast cancer metastasis

10:00-10:25 **Guy Zoltsman**, Weizmann Institute of Science
Conspiring with the Enemy: A Unique Mechanism in Class A JDPs Stabilizes Oncogenic p53 Mutants

10:25-11:00 ☐ **Coffee Break**

11:00-12:25 EPR & DNP

(chair: Daniella Goldfarb)

11:00-11:35 **Marina Bennati**, MPI-Goettingen
Polarizing nuclear spins at the interface between ESR and NMR spectroscopy

11:35-12:00 **Ilia Kaminker**, Tel Aviv University
DNP mechanisms from the electron spin perspective at 3.3 - 14 T

12:00-12:25 **Aharon Blank**, Technion - IIT
Micro-resonators for Biological application of Electron Spin Resonance

12:25-14:30 🍴 **Lunch & visit to the Weizmann House (optional)**

14:30-15:55 MRI/MRS

(chair: Michal Neeman)

14:30-15:05 **Susann Boretius**, DKFZ-Goettingen
Preclinical MRI and MRS – what can we learn from comparative studies across species?

15:05-15:30 **Elton Montrazi**, Weizmann Institute of Science
Customized sequences and imaging pipelines enable sub-mM in vivo Deuterium Metabolic Imaging of the Warburg effect

15:30-15:55 **Tal Finkelman**, Weizmann Institute of Science
Reward and Punishment Engage Different Inhibitory Neural Mechanisms

15:55-16:30 ☐ **Coffee Break**

16:30-18:00 MRI/MRS

(chair: Christian Griesinger)

16:30-17:05 **Amnon Bar-Shir**, Weizmann Institute of Science
19F-NMR and 19F-MRI of nanofluorides

17:05-17:30 **Tor Rasmus**, German Primate Center
Interspecies quantification of metabolites with LC Model: promise and challenges

17:30-18:05 **Thoralf Niendorf**, MDC-Charite, Berlin
W(h): ither Cardiac Magnetic Resonance at Ultrahigh Fields

18:05 **Closing Remarks**

Stefan Glöggler, MPI-Goettingen

Organizing committee

Lucio Frydman | Weizmann Institute of Science

Stefan Glöggler | MPI, Goettingen

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- Minerva Foundation
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- Department of Chemical and Biological Physics
- Clore Institute for High Field Magnetic Resonance Imaging and Spectroscopy
- Kimmel Institute for Magnetic Resonance

Conference coordinator & accessibility issues

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