

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

NMR in Biological Mechanisms (E5)

June 21-24, 2020 • Herrenhausen Palace • Hannover, Germany

Scientific Organizers: Teresa Carlomagno, Mei Hong and Ichio Shimada

Organized in collaboration with Volkswagen Foundation

Global Health Travel Award Deadline: January 21, 2020 / Discounted Abstract & Scholarship Deadline: February 20, 2020 / Abstract Deadline: March 19, 2020 / Discounted Registration Deadline: April 22, 2020

SUNDAY, JUNE 21

Arrival and Registration

MONDAY, JUNE 22

Supra-Molecular Machines and Assemblies

Tatyana Polenova, University of Delaware, USA
Structure and Dynamics of Protein Assemblies by MAS NMR

Remco Sprangers, Regensburg University, Germany
Dynamic Machinery in mRNA Degradation

Adam Lange, Leibniz Institute for Molecular Pharmacology, Germany
Selective and Non-Selective Cation Channels Studied under Physiological Conditions by Proton-Detected Solid-State NMR

Teresa Carlomagno, Universität Hannover, Germany
Integrative Methods for Multimeric Complexes in the Regulation of Gene Expression

Short Talks Chosen from Abstracts

Workshop and Panel Discussion 1: NMR and Molecular Mechanisms in Drug Development

Alvar Gossert, ETH Zürich, Switzerland
Talk Title to be Announced

Wolfgang Jahnke†, Novartis Institutes for BioMedical Research, Switzerland
Talk Title to be Announced

Short Talks Chosen from Abstracts

Structural Biology of Complex Systems by NMR and Other Methods

Melinda J. Duer, University of Cambridge, UK
The Chemistry of Ageing and Cancer in the Extracellular Matrix

Lynette Cegelski, Stanford University, USA
EM and ssNMR of Bacterial Extracellular Matrix

Stephan Grzesiek, University of Basel, Switzerland
Protein Allosteric Functional Mechanisms Determined by High-Resolution NMR

Short Talks Chosen from Abstracts

Poster Session 1

TUESDAY, JUNE 23

Dynamic Structures and Function

J. Patrick Loria, Yale University, USA
Dynamics and Allostery Regulates Phosphatases Function

Harald Schwalbe, University of Frankfurt, Germany
Conformational Dynamics Sustains Regulatory Signaling in Riboswitches

Rina Rosenzweig, Weizmann Institute of Science, Israel
Molecular Chaperones in the Protein Disaggregation System

Charalampos Babis Kalodimos, St. Jude Children's Research Hospital, USA
Allosteric Regulation in Protein Kinases

Short Talks Chosen from Abstracts

Conformational Changes in Membrane Proteins

Ichio Shimada, University of Tokyo, Japan
Function-Related Dynamic of Membrane Proteins

Clemens Glaubitz, University of Frankfurt, Germany
Functional Mechanism of ABC Transporters

Mei Hong, Massachusetts Institute of Technology, USA
Protein Dynamics and Protein-Ligand Interactions in Lipid Membranes from Solid-State NMR

Short Talks Chosen from Abstracts

Poster Session 2

WEDNESDAY, JUNE 24

Nucleic Acids Structure and Function

Juli Feigon, University of California, Los Angeles, USA
Integrative Structural Biology of RNPs

Alexander Marchanka, Leibniz Universität Hannover, Germany
ssNMR of RNA and RNP Complexes

Victoria Manuel D'Souza, Harvard University, USA
Structures of the HIV Genome: Insights into Regulation of Reverse Transcription, Transcription and Translation

Qi Zhang, University of North Carolina at Chapel Hill, USA
RNA Dynamics Underlines the Functional Mechanism of Riboswitches

Short Talks Chosen from Abstracts

Workshop and Panel Discussion 2: Complementary Methods: Opportunities and Challenges

Frank Gabel, Institut de Biologie Structurale, France
Small Angle Neutron Scattering: A Perfect Mate for NMR Structural Biology

Hassane S. Mchaourab, Vanderbilt University, USA
Talk Title to be Announced

Riccardo Pellarin, Institut Pasteur-CNRS UMR 3528, France
Talk Title to be Announced

Short Talk Chosen from Abstracts

Methodological Frontiers

Guido Pintacuda, Ecole Normale Supérieure, France
Magic Angle Spinning at > 100 kHz

Tuo Wang, Louisiana State University, USA
Structure and Drug Inhibition of Fungal Cell Wall from Dynamic Nuclear Polarization Solid-State NMR

Haribabu Arthanari, Harvard Medical School, USA
¹⁵N Detection for Protein-Protein Interactions in Large Complexes

Short Talk Chosen from Abstracts

Meeting Wrap-Up: Outcomes and Future Directions (Organizers)

THURSDAY, JUNE 25

Departure