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symposium  
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# HPC Symposium

Engineering biomedical breakthroughs  
enabled by computer sciences

**Thursday, November 15, 2018**

Helmholtz Zentrum München, Campus Neuherberg  
Ground floor conference room, HDC building 3620

## Session 1

9.00 am – 10.45 am

**Björn Schwalb, MPI for Biophysical Chemistry; Germany**

From RNA metabolism to full-length RNA isoform characterization in diseases

**Clarice Aiello, Stanford University; USA**

From nanotech to living sensors: unraveling the spin-physics of biosensing at the nanoscale

**Francisco Balzarotti, MPI for Biophysical Chemistry; Germany**

From molecules to tissue: next-generation super-resolution microscopy

**Benjamin Engel, MPI of Biochemistry; Germany**

Exploring molecular landscapes inside cells with in situ cryo-electron tomography

## Session 2

11.15 am – 12.45 pm

**Lynette Lim, King's College London; UK**

Early neuronal diversity shapes cortical circuit assembly

**Tommaso Patriarchi, University of California, Davis; USA**

Genetically encoded sensors for imaging neuromodulators *in vivo*

**Jerzy Szablowski, California Institute of Technology; USA**

Acoustically targeted chemogenetics for the non-invasive control of neural circuits

**Na Cai, European Bioinformatics Institute; UK**

Investigating the genetic and environmental factors for neuropsychiatric diseases

## Session 3

2.00 pm – 3.40 pm

**Tzachi Hagai, European Bioinformatics Institute; UK**

Trapped between pathogens and autoimmunity: the evolution of our immune system

**Laleh Haghverdi, European Molecular Biology Laboratory; Germany**

Integrative analysis of single cell -omics

**Natalie Kraemer, MPI of Biochemistry; Germany**

Proteomic profiling to analyze cellular processes in metabolic diseases

**Reza Kalhor, Harvard Medical School; USA**

Storing cellular information in dynamic barcodes

