



For information and registration see  
[www.lifescience-munich.de](http://www.lifescience-munich.de)



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[www.lifescience-munich.de](http://www.lifescience-munich.de)

**Organizers:** Graduate School of Systemic Neurosciences GSC 82 · Graduate School of Life Science Munich LSM · Graduate School of Quantitative Biosciences Munich GSC 1006 · Chromatin Dynamics IRTG-SFB 1064 · Integrated Analysis of Macromolecular Complexes and Hybrid Methods in Genome Biology DFG-GRK 1721 · Cell-Fate Decisions in Immune Systems IRTG-SFB 1054 · Munich Cluster for Systems Neurology EXC 1010 · Leukocyte Trafficking IRTG-SFB 914 · Center for NanoScience CeNS Nanoagents IRTG-SFB 1032 · IMPRS from Biology to Medicine · Helmholtz Research School Lung Biology and Disease

**Coordinated by the GraduateCenter<sup>LMU</sup>**

The graduate programs of the Life Science Campus Großhadern/Martinsried are jointly hosting an event on cutting-edge technologies

New techniques develop quickly and can revolutionize the scientific landscape. Techniques like PCR, molecular sequencing and cloning have transformed the pace and progress in science and have become standard tools today.

What current methods might have similar impact? How were they developed? Which cutting-edge technologies are in practice here on the Life Science Campus Großhadern/Martinsried? And which research groups have implemented them?

To increase the visibility of local cutting-edge technologies and to connect peers and expert users, 12 life science programs and the GraduateCenter<sup>LMU</sup> have joined forces to organize a campus-wide informational event aimed towards next generation researchers.

For next generation researchers

# CUTTING-EDGE TECHNOLOGIES

Date **Thursday July 23, 2015** Time **13:00 - 19:00**

Venue **LMU Biocenter Martinsried**



13:00

14:00

15:00

16:00

17:00

18:00

19:00

20:00

LMU Biocenter, main lecture hall B00.019

**13:00 - 13:15**

**Opening and Welcome**

Prof. Dr. Barbara Conradt, LMU Vice President for Research,  
Prof. Dr. Ernst-Ludwig Winnacker, Secretary General, Human Frontier Science Program, Strasbourg

**13:15 - 14:15**

**CRISPR-Cas9: a game changer in genome engineering**

Prof. Dr. Emmanuelle Charpentier, Helmholtz Center for Infection Research, Braunschweig

**14:15 - 15:15**

**Optogenetics: basics, applications and chances**

Prof. Dr. Ernst Bamberg, MPI of Biophysics, Frankfurt am Main

15:15 - 15:45 **Coffee Break, Thematic Hotspots for networking**

13 parallel Breakout Sessions. Online registration required! ([www.lifescience-munich.de](http://www.lifescience-munich.de))  
LMU Biocenter and other institutions on campus, rooms to be announced on site

**15:45 - 17:30**

**CRISPR/Cas-assisted genome engineering: strategies and applications**

Dr. Sebastian Bultmann, Faculty of Biology, LMU Munich

**15:45 - 17:30**

**Induced pluripotent stem cells: a novel reprogramming technology**

Dr. Mari Ohnuki, Faculty of Biology, LMU Munich

**15:45 - 17:30**

**One by one: the age of single-cell genomics**

Christoph Ziegenhain, Faculty of Biology, LMU Munich

**15:45 - 17:30**

**Mass spectrometry analysis of proteins: from one to omics**

Dr. Nagarjuna Nagaraj, MPI of Biochemistry

**15:45 - 17:30**

**Frontiers in Light Microscopy: from super-resolution to live-cell imaging**

Dr. Hartmann Harz, Center for Advanced Light Microscopy, LMU Munich

**15:45 - 17:30**

**Advanced Fluorescence Microscopy**

Dr. Viola Baumgärtel, Faculty of Chemistry and Pharmacy, LMU Munich

**15:45 - 17:30**

**Super-Resolution Microscopy with DNA molecules**

Dr. Ralf Jungmann, MPI of Biochemistry

**15:45 - 17:30**

**Using Photopharmacology to control neural behavior**

Laura Laprell and Arunas Damijonaitis,  
Faculty of Chemistry and Pharmacy, LMU Munich

**15:45 - 17:30**

**2 Photon-Microscopy: applications in vascular biology**

Dr. med. Florian Gärtner, Medical Faculty, LMU Munich

**15:45 - 17:30**

**Resolution revolution in Cryo-Electron Microscopy**

Dr. Thomas Becker, Gene Center, LMU Munich

**15:45 - 17:30**

**Nanospectroscopy: what can we learn from single molecules?**

Dr. Diana Pippig and Dr. Michael Nash, Faculty of Physics, LMU Munich

**15:45 - 17:30**

**Next Generation Sequencing: a tool in clinical science**

Dr. med. Meino Rohlf, Medical Faculty, LMU Munich

**15:45 - 17:30**

**Optogenetics: activation and suppression of targeted neurons by genetically encoded light-driven actuators**

Cvetalina N. Coneva, Hakan Kucukdereli and Sercan Sayin, MPI of Neurobiology

17:30- 18:00 **Coffee Break, Thematic Hotspots for networking**

LMU Biocenter, main lecture hall B00.019

**18:00 - 19:00**

**Connectomics: the dense reconstruction of neuronal networks**

Professor Dr. Moritz Helmstädter,  
MPI for Brain Science, Frankfurt am Main

**The program continues informally over a barbecue dinner on the terrace.**

13:00

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