



LUDWIG-
MAXIMILIANS-
UNIVERSITÄT
MÜNCHEN



HARVARD UNIVERSITY

LMU-Harvard Young Scientists' Forum

From Molecules to Organisms III, June 26 – 30, 2011

The LMU-Harvard Young Scientists' Forum (YSF) seeks to unite Ph.D. students and postdoctoral fellows from the Harvard University and the Ludwig-Maximilians-Universität (LMU) with core faculty from the two universities to create a framework for an interdisciplinary exchange of ideas. The first conference of the series was held at LMU in June 2009, followed by a conference at Harvard University in 2010. LMU-Harvard YSF 2011 will be held at the Center for Advanced Studies (CAS^{LMU}) of the LMU Munich.

Sunday, June 26th

Arrival in Munich (Transfer to the Hotel individually arranged): Hotel Cosmopolitan, Hohenzollernstr. 5, 80801 München, Phone: +49 (0) 89 383810, www.cosmopolitanhotel.de

15.00 – 16.30 **Optional Program: Guided city tour** (meeting point: hotel lobby)

19.00 meeting point: hotel lobby, walk to the restaurant

19.30 **Welcome Dinner**

Seehaus im Englischen Garten, Kleinhesselohe 3, 80802 München, Phone: +49 (0) 89 381 613 0

Monday, June 27th

Center for Advanced Studies (CAS^{LMU}): Seestraße 13, 80802 München, Phone: +49 (0) 89 218072080

08.30 meeting point: hotel lobby, walk to the CAS

09.00 – 09.10 **Opening Remarks: Ulrich Pohl**, Vice President, LMU

09.10 – 10.10 **lecture 1 – Christian Haass:** "The molecular clockwork of Alzheimer's disease"

10.10 – 10.30 coffee break (catered)

10.30 – 12.30 **session 1 "Pathologies"** (Chair: Christian Haass)

Dorothee Dormann – "ALS-associated FUS mutations disrupt Transportin-mediated nuclear import"

Stylianos Michalakis – "Gene replacement therapy for retinal CNG channelopathies"

Michael McKeown – "Development of direct acting inhibitors of epigenetic targets"

Moritz Rapp – "Toll-like receptor agonists prevent regulatory T cell infiltration of tumors by specifically inhibiting migration of FoxP3+ cells"

12.30 – 13.30 lunch (catered)

13.30 – 14.30 **lecture 2 – Catherine Dulac:** „Sex Battles in the Brain: a Genome-Wide Analysis of Genomic Imprinting“

14.30 – 14.50 coffee break (catered)

14.50 – 16.50 **session 2 "Development and Neural Circuits"** (Chair: Markus Meister)

Sylvia Cappello – "A new mouse model of 'double cortex' – the role of RhoA in cortical development"



Patrick Müller – “The distribution of Nodal and Lefty signals is determined by differential diffusivity and clearance”

Yong Li – “Color Vision Circuitry in the Outer Retina of Zebrafish”

Jonathan Garst Orozco – “Learning-related synaptic reorganization in the motor control circuits of songbirds”

16.50 – 17.10 coffee break (catered)

17.10 – 18.10 **lecture 3 – Matthias Mann:** “High resolution, quantitative proteomics turbo-charges biochemistry”

18.30 – 22.00 **Conference Dinner:** Reitschule, Königinstraße 34, 80802 München, Phone: +49 (0) 89 3888760

Tuesday, June 28th

Center for Advanced Studies (CAS^{LMU}): Seestraße 13, 80802 München, Phone: +49 (0) 89 218072080

09.00 – 10.00 **lecture 4 – Tobias Bonhoeffer:** “How activity changes synapses in the mammalian brain”

10.00 – 10.20 coffee break (catered)

10.20 – 12.20 **session 3** “Neural circuits” (Chair: Felix Felmy)

Hubert Eichner – “Two separate motion detectors for on and off signals”

Risa Kawai – “The Role of Motor Cortex in the Production of Complex Motor Sequences”

Aditi Deshpande – “Rabies virus mediated tracing of synapses onto adult generated neurons”

Arpiar Saunders – “Balance of direct/indirect pathway activity governs corticostriatal synaptogenesis”

12.20 – 13.30 lunch (catered) & **YSF future session** (*faculty only: CAS ‘oval office’*)

13.30 – 14.15 bus transfer CAS – HighTechCampus

Munich Center for Neurosciences MCN^{LMU}

Department Biology II Neurobiology, Großhadernerstraße 2, 82152 Planegg – Martinsried

Munich Center for Integrated Protein Sciences, CIPSM

Department of Chemistry and Biochemistry, Butenandtstraße 5-13, 81377 München

14.30 – 16.30 **session 4** “Molecular methods” (Chair: Jon Clardy)

LMU Dept. Chemistry and Pharmacy, building C, seminar room C2.003

Alwin Reiter – “Structure of the ligand binding domain of an ionotropic glutamate receptor with an optical switch”

Peter Duewell – “Tri-functional siRNA combining TGF-beta silencing, RIG-I activation and apoptosis induction induces effective antitumor responses in pancreatic carcinoma”

Gaëtan Bellot – “Malleable DNA-Nanostructures as Alignment Media for Membrane Protein NMR”

Johannes Kreuzer – “Acivicin as a probe for ABPP (Activity-Based Protein Profiling)”

session 5 “Neural Coding” (Chair: Christian Leibold)

LMU Dept. Biology II, BioCenter, seminar room D00.013

Alexander Mathis – “Optimal Distribution of Spatial Periods for Grid Cells Ensembles on Linear Track”

Margarida Agrochao – “Visual Cortex in Motion”

Alice Yiqing Wang – “Neural basis of decision making: choosing what to do and how quickly to act”

16.30 – 16.50 coffee break (catered)

16.50 – 17.50 **lecture 5 – William Shih:** “Self-assembled DNA-nanostructure tools for molecular biophysics”;

LMU Dept. Pharmacy; building F; lecture hall FU1.013

lecture 6 – Venkatesh Murthy: “Feedback control of olfactory processing in mammals”;

LMU Dept. Biology II; BioCenter; lecture hall B01.019

18.00 – 18.45 bus transfer HighTechCampus – CAS

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19.00 – 19.30 **CAS Reception**

19.30 – 21.00 **Parmenides Lecture – Antonio Damasio** (assoc. YSF event): “Onto- and phylogenesis of selfhood”



Wednesday, June 29th

Center for Advanced Studies (CAS^{LMU}): Seestraße 13, 80802 München, Phone: +49 (0) 89 / 218072080

09.00 – 10.00 **lecture 7** – Thomas Carell: “The chemistry of genome maintenance”

10.00 – 10.20 coffee break (catered)

10.20 – 12.25 **session 6** “Signaling” (Chair: Benedikt Berninger)

Pia Johansson – “Long distance signalling from the hindbrain choroid plexus to forebrain stem cells via WNT modulators secreted into cerebrospinal fluid”

Jason Zhang – “Domain-level essentiality of the Mycobacterium tuberculosis genome”

Falko Hampel – “FLRT2 and FLRT3 act as repulsive guidance cues for Unc5-positive neurons”

Laura Strittmatter – “A Systems Analysis of Mitochondrial Metabolism”

Alvaro Tejero-Cantero – “Coherent phasic excitation during hippocampal ripples”

12.25 – 14.00 lunch break (catered) & **YSF posters**

Johannes Broichhagen – “Optochemical genetics: Photocontrolling enzymes”

Felix Felmy – “Comparing the synaptic transmission and postsynaptic integration of large synapses in the auditory brainstem of mongolian gerbils”

Thomas Gerling – “Re-building evolution: toward synthetic nucleotide-dependent switch structures assembled with DNA origami”

Thomas Martin – “Custom DNA-origami apertures for solid-state nanopores”

14.00 – 16.00 **session 7** “Chemical Biology” (Chair: Dirk Trauner)

Kevin Esvelt – “A system for the continuous directed evolution of biomolecules”

Nina Mäusbacher – “Natural product-inspired novel antibiotics”

Anna Lone – “A substrate-free activity-based protein profiling screen for the discovery of selective PREPL inhibitors”

Laura Stone – “A screen for compounds that select against antibiotic resistance”

16.00 – 16.20 coffee break (catered)

16.20 – 17.20 **lecture 8** – Eric Rubin: “Making mistakes in translation, accidentally on purpose”

17.20 – 17.30 closing remarks and comments

17.30 – 18.15 wrap-up session (faculty only; CAS ‘oval office’)

Thursday, June 30th

08.30 – 19.00 Excursion to Berchtesgaden (hiking), (*meeting point: hotel lobby*)

Friday, July 1st

Departure, individually arranged

■ **For scientific enquiries, please contact:** Oliver Behrend, Managing Director, Munich Center for Neurosciences – Brain & Mind (MCN), o.behrend@lmu.de ■ **For administrative enquiries, please contact:** Simone Glasl, Project Manager, International Cooperation LMUexcellent, simone.glasl@verwaltung.uni-muenchen.de

■ **LMU-Harvard Young Scientists' Forum at the Center for Advanced Studies (CAS^{LMU}), LMU: From Molecules to Organisms III, Munich, June 26 – 30, 2011**
 ■ **Under the auspices of** Prof. Dr. Ulrich Pohl, Vice-President for International Affairs, LMU ■ **Academic Board:** Prof. Dirk Trauner (Center for Integrated Protein Science Munich, CIPSM), Prof. Dr. Benedikt Grothe (Munich Center for Neurosciences, MCN) ■ **Program Management:** Simone Glasl (LMU International Affairs)
 ■ **Participating academic units:** Center for Integrated Protein Science Munich (CIPSM), Munich Center for Neurosciences (MCN), Graduate School for Systemic Neurosciences (GSN) ■ **Academic Program:** Prof. Dr. Benedikt Grothe / Prof. Dr. Oliver Behrend (MCN/GSN), Prof. Dr. Dirk Trauner / Dr. Oliver Baron (CIPSM), Dr. Nina Mäusbacher, Alexander Mathis, Alvaro Tejero Cantero (Ph.D. / Post-doctoral representatives) ■ **Institutional Responsibility:** LMU International Affairs, Center for Advanced Studies (CAS^{LMU})



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HARVARD UNIVERSITY

LMU-Harvard Young Scientists' Forum

From Molecules to Organisms III, June 26 – 30, 2011

Participants

HARVARD UNIVERSITY

- **Margarida Agrochao**, Harvard, Harvard Center for Brain Science, laboratory of Markus Meister
- **Gaëtan Bellot**, Harvard, Department of Cancer Biology, laboratory of William Shih
- **Kenny Blum**, Executive Director, Harvard Center for Brain Science
- **Jon Clardy**, Professor, Harvard Medical School, Department of Biological Chemistry and Molecular Pharmacology
- **Catherine Dulac**, Professor, Harvard, Department of Molecular and Cellular Biology
- **Florian Engert**, Professor, Harvard, Department of Molecular and Cellular Biology
- **Kevin Esvelt**, Harvard, Department of Chemistry and Chemical Biology, laboratory of David Liu
- **Jonathan Garst Orozco**, Harvard, Department of Organismic and Evolutionary Biology, laboratory of Bence Ölveczky
- **Risa Kawai**, Harvard, Department of Organismic and Evolutionary Biology, laboratory of Bence Ölveczky
- **Michael McKewon**, Harvard, Harvard Medical School, laboratory of James E. Bradner
- **Yong Nathan Li**, Harvard, Department of Molecular and Cellular Biology, laboratory of John Dowling
- **Anna Mari Lone**, Harvard, Department of Chemistry and Chemical Biology, laboratory of Alan Saghatelian
- **Markus Meister**, Professor, Harvard, Department of Molecular and Cellular Biology, Harvard Center for Brain Science
- **Patrick Mueller**, Harvard, Department of Molecular and Cellular Biology, laboratory of Alex Schier
- **Venkatesh Murthy**, Professor, Harvard, Department of Molecular and Cellular Biology
- **Eric Rubin**, Professor, Harvard, Department of Immunology and Infectious Diseases
- **Arpiar Saunders**, Harvard, Department of Neurobiology, laboratory of Bernardo Sabatini
- **William Shih**, Professor, Harvard, Department of Cancer Biology
- **Laura Stone**, Harvard, Department of Systems Biology, laboratory of Roy Kishony
- **Laura Strittmatter**, Harvard, Department of Systems Biology, laboratory of Vamsi Mootha
- **Alice Yiqing Wang**, Harvard, Department of Molecular and Cellular Biology, laboratory of Naoshige Uchida
- **Jason Zhang**, Harvard, Department of Immunology and Infectious Diseases, laboratory of Eric Rubin

LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN (LMU)

Technische Universität München (TUM)

Max Planck Institute of Neurobiology (MPI of Neurobiology)

Max Planck Institute of Biochemistry (MPI of Biochemistry)

Helmholtz Institute of Stem Cell Research

- **Oliver Baron**, Managing Director, of the Center for Integrated Protein Science Munich (CIPSM/LMU)
- **Oliver Behrend**, Managing Director, of the Munich Center for Neurosciences – Brain & Mind (MCN/LMU)
- **Benedikt Berninger**, Post-doctoral fellow, LMU, Institute of Physiology, Department of Physiological Genomics, laboratory of Magdalena Götz
- **Martin Biel**, Professor, LMU, Pharmacology for Natural Sciences, Department of Pharmacology
- **Tobias Bonhoeffer**, Professor, MPI of Neurobiology, Department of Cellular and Systems Neurobiology



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- **Axel Borst**, Professor, MPI of Neurobiology, Department of Systems and Computational Neurobiology
- **Lena Bouman**, Academic Coordinator (Natural Sciences and Medicine), Center for Advanced Studies (CAS^{LMU})
- **Johannes Broichhagen**, PhD student, LMU, Department of Chemistry, laboratory of Dirk Trauner
- **Silvia Capello**, Post-doctoral fellow, Helmholtz Zentrum München, Institute of Stem Cell Research, laboratory of Magdalena Götz
- **Thomas Carell**, Professor, LMU, Department of Chemistry
- **Patrick Cramer**, Professor, LMU, Department of Biochemistry
- **Aditi Deshpande**, PhD student, LMU, Department of Physiology, laboratory of Magdalena Götz
- **Dorothee Dormann**, Post-doctoral fellow, DZNE/ LMU, Adolf Butenandt Institute, Department of Metabolic Biochemistry, laboratory of Christian Haass
- **Peter Düwell**, Post-doctoral fellow, LMU, Medical Clinic, Clinical Pharmacology, laboratory of Stefan Endres
- **Hubert Eichner**, PhD student, MPI Neurobiology, Department of Systems and Computational Neurobiology, laboratory of Axel Borst
- **Stefan Endres**, Professor, LMU, Medical Clinic, Clinical Pharmacology
- **Felix Felmy**, Post-doctoral fellow, LMU, Department of Biology II, Neurobiology, laboratory of Benedikt Grothe
- **Thomas Gerling**, PhD student, TUM, Physics Department
- **Simone Glasl**, Project Manager, International Cooperation LMUexcellent
- **Magdalena Götz**, Professor, Helmholtz, Institute of Stem Cell Research
- **Benedikt Grothe**, Professor, LMU, Department of Biology, Division of Neurobiology
- **Matthias Hadesbeck**, Deputy Director, International Office, LMU
- **Christian Haass**, Professor, DZNE/ LMU, Adolf Butenandt Institute, Metabolic
- **Falko Hampel**, PhD student, MPI of Neurobiology, Department of Molecular Neurobiology, laboratory of Rüdiger Klein Biochemistry
- **Andreas Herz**, Professor, LMU, BCCN, Department of Biology II
- **Pia Johansson**, Post-doctoral fellow, Helmholtz, Institute of Stem Cell Research, laboratory of Magdalena Götz
- **Ulrich Pohl**, Professor, Vice-President of LMU for International Affairs
- **Johannes Kreuzer**, PhD student, TUM, Department of Chemistry, laboratory of Stephan Sieber
- **Rüdiger Klein**, Professor, MPI of Neurobiology, Department of Molecular Neurobiology
- **Christian Leibold**, Professor, LMU, Neurobiology, Department of Biology II
- **Nina Mäusbacher**, Post-doctoral fellow, TUM, Department of Chemistry, laboratory of Stephan Sieber
- **Matthias Mann**, Professor, MPI of Biochemistry, Department of Proteomics and Signal transduction
- **Thomas Martin**, PhD student, TUM, Physics Department, CIPSM
- **Alexander Mathis**, PhD student, LMU, BCCN, Department of Biology II, laboratory of Andreas Herz
- **Stylianos Michalakis**, Post-doctoral fellow, LMU, Department of Pharmacology, laboratory of Martin Biel
- **Moritz Rapp**, PhD student, LMU, Medical Clinic, Clinical Pharmacology, laboratory of Stefan Endres
- **Alwin Reiter**, PhD student, LMU, Department of Chemistry, laboratory of Dirk Trauner
- **Stephan Sieber**, Professor, TUM, Department of Chemistry
- **Alexandra Stein**, Program Coordinator, Graduate School of Systemic Neurosciences
- **Alvaro Tejero Cantero**, PhD student, LMU, Neurobiology, Department of Biology II, laboratory of Christian Leibold
- **Dirk Trauner**, Professor, LMU, Department of Chemistry
- **Sylvia Zehner**, Assistant, Munich Center for Neuroscience – Brain & Mind (MCN)

■ **For scientific enquiries, please contact:** Oliver Behrend, Managing Director, Munich Center for Neurosciences – Brain & Mind (MCN), o.behrend@lmu.de ■ **For administrative enquiries, please contact:** Simone Glasl, Project Manager, International Cooperation LMUexcellent, simone.glasl@verwaltung.uni-muenchen.de

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