

## CONFERENCE SITE



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### Scientific Program

Dr. Dr. med. univ. Elisabeth Binder  
MPI of Psychiatry, München  
Prof. Dr. Diethard Tautz  
MPI for Evolutionary Biology, Plön

### Registration by September 13, 2016

For MPG participants:  
<https://extranet.mpg.de/sections/Sektionen/MPS>  
For external participants:  
<https://umfragen.vw.mpg.de/index.php/383575/lang-en>

## HOW TO GET TO THE HARNACK-HAUS



**From airport Tegel (18 km)** board bus route 109 to "Zoologischer Garten". Change at "Jakob-Kaiser-Platz" for the underground line U7 to "Rudow" and get off at "Fehrbelliner Platz". There you get on the underground line U3 to "Krumme Lanke" until "Thielplatz". Leave the underground station by walking in the direction of travel and take the left exit. The Harnack-Haus is 100 meters ahead on the right hand side.

**From airport Berlin Schönefeld (25 km)** board bus route 171 to the underground station "Rudow". There take the underground line U7 to "Rathaus Spandau" and get off at "Fehrbelliner Platz". There you get on the underground line U3 towards "Krumme Lanke" until "Thielplatz". Leave the underground station by walking in the direction of travel and take the left exit. The Harnack-Haus is 100 meters ahead on the right hand side.

**From Berlin's central station "Hauptbahnhof" (15 km)** take the suburban train S7 to "Potsdam Hauptbahnhof" and get off at "Zoologischer Garten". There you get on the underground line U9 towards "Rathaus Steglitz" until "Spichernstraße". Change here for the underground line U3 to "Krumme Lanke" and get off at "Thielplatz". Leave the underground station by walking in the direction of travel and take the left exit. The Harnack-Haus is 100 meters ahead on the right hand side.

**From the train station "Südkreuz" (9 km)** take the suburban train S41 (only selected trains operate the station, please check before boarding) to "Heidelberger Platz". Change here for the underground line U3 to "Krumme Lanke" and get off at "Thielplatz". Leave the underground station by walking in the direction of travel and take the left exit. The Harnack-Haus is 100 meters ahead on the right hand side.

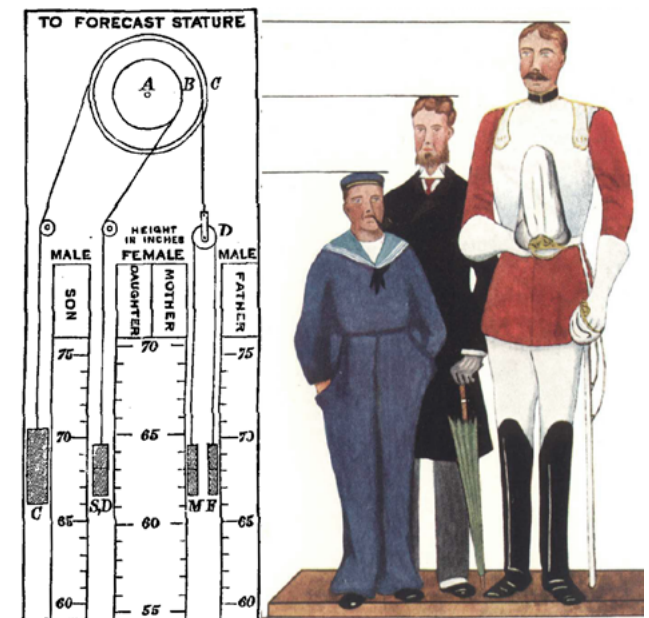
**Arriving by car:** Take highway A 115 to "Hüttenweg / exit 2". Turn right towards "Dahlem" until you reach the corner of "Clayallee" where you turn right again. At the next crossroads turn left onto "Saargemünder Straße". A short way along, you reach the Harnack-Haus at the corner of Ihnestraße.



MAX-PLANCK-GESELLSCHAFT

## MAX PLANCK SYMPOSIUM on COMPLEX TRAIT GENETICS

October 6 – 7, 2016 in Berlin



## PROGRAM

## THURSDAY, OCTOBER 6, 2016

08:45 Welcome and introduction

### Session 1: The genetics of complexity

09:00 „The genetics of complex traits: lessons from *Drosophila*“  
**Trudy Mackay**  
(North Carolina State University, Raleigh, USA)

09:40 „Detecting interactions via polygenic genetic and transcriptional risk scores“  
**Greg Gibson**  
(University of Basel, Switzerland)

10:20 „Population epigenetics and epigenomics“  
**Frank Johannes**  
(Technical University of Munich, Germany)

11:00 Coffee break

### Session 2: Quantitative trait genetics in the genomic age

11:30 „Embracing complexity: methods for complex disease genomics“  
**Marylyn Ritchie**  
(Geisinger Health System, Danville, USA)

12:10 „The genetic basis for adaptation in domesticated animals and natural populations“  
**Leif Andersson** (Uppsala University, Sweden)

12:50 Lunch break

### Session 3: Complex phenotypes and evolution

14:00 „Maternal and zygotic genetic effects in life-history evolution“  
**Matthew Rockman**  
(New York University, USA)

14:40 „Craniofacial shape and the middle-out approach to complex traits“  
**Benedikt Hallgrímsson** (University of Calgary, Canada)

15:20 Coffee break

### Session 4: Plant and animal breeding

16:00 „How selection for complex traits shapes the genome of breeding populations“  
**Henner Simianer**  
(Georg-August-University, Göttingen, Germany)

16:40 „Genomic basis of heterosis in rice and the implications for crop genetic improvement“  
**Qifa Zhang**  
(Huazhong Agricultural University, Wuhan, China)

17:20 „Trait improvement in plant breeding: quantitative approaches“  
**Léon Broers** (KWS Saat AG, Einbeck, Germany)

19:00 Dinner

20:00 Scientific discussion

## FRIDAY, OCTOBER 7, 2016

### Session 5: Statistical approaches

09:00 „Causal modelling of relationships between genotype and phenotype using multi-omics data“  
**Heather Cordell**  
(Newcastle University, Newcastle upon Tyne, UK)

09:40 „Network biology and data integration in population cohorts“  
**Fabian Theis**  
(Helmholtz Zentrum, Munich and TU Munich, Germany)

10:20 Coffee break

### Session 6: Complex diseases

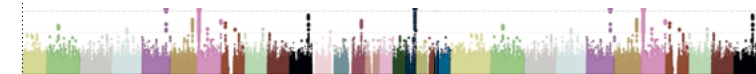
11:00 „Fine-mapping and functional analysis of GWAS loci for metabolic traits“  
**Karen Mohlke**  
(University of North Carolina at Chapel Hill, USA)

11:40 „Complexity and reductionism in the omics era“  
**Kristel Van Steen**  
(University of Liège, Belgium)

12:20 „Molecular dissection of schizophrenia GWAS loci“  
**Daniel Weinberger**  
(Yale School of Public Health, USA)

13:00 Lunch break

14:00 Scientific discussion



The inheritance of most phenotypes is not governed by simple Mendelian rules. Even a simple quantitative trait such as human height is influenced by more than 400 genes, each of which contributes only a small part to the heritability. Modern quantitative trait genetics provides insights that classical knockout studies of genes can not reveal. The particulate view of inheritance needs to be complemented by a statistical view. This has major implications for understanding the phenotypes of individuals, for human health and for animal and plant breeding. We are at the dawn of a fundamentally revised view of genetics that goes back in its first principles to the book *Natural Inheritance* by Francis Galton (1889), mostly his studies on human height (cover illustration).

