

**DIABETES**  
*THE NEXT  
GENERATION*



10<sup>th</sup> Helmholtz Diabetes Conference

# I→ DIABETES CONFERENCE

27-29.09.2023

KÜNSTLERHAUS MUNICH, GERMANY

HELMHOLTZ  
MUNICH→

### Topics:

- Pancreatic Development and Regenerative Medicine
- Genetics of Diabetes
- Insulin Sensitivity and Nutrition
- Adipose Tissue and Lipid Metabolism
- Central Control of Metabolism
- Mitochondria and Metabolic Diseases
- Neuroendocrinology of Diabetes
- Epigenetics and Metabolic Health

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#HelmholtzDiabetes2023

# Welcome Note

**Dear Friends and Colleagues,**

We are excited to welcome you to our 10<sup>th</sup> Helmholtz Diabetes Conference. On the heels of the success of the past nine conferences, in 2023 we are continuing this recurring high-impact meeting for the tenth time with the goal of facilitating a cure for all forms of diabetes.

Every year, this conference series integrates research reports on essential scientific questions in urgent need of a breakthrough. This 10th conference will focus on the next generation of successful researchers in the field of diabetes.

We are looking forward to celebrating getting yet one step closer to finding a cure for diabetes!

Stephan & Matthias & Henrik






# Program Wednesday September 27

## 08:30 – 10:45 Conference Opening

08:30–10:00 **Coffee and Registration**

10:00–10:15 **Welcome and Opening Remarks**

 Stephan Herzig, Helmholtz Munich

10:15–10:45 **Opening Keynote Lecture**

Chair: Matthias Blüher

 Mikael Ryden, Karolinska Institutet

Lipid Droplets in Health and Disease

## 10:45 – 12:15 Session 1

### **Pancreatic Development and Regenerative Medicine**

Chaired by Mostafa Bakhti and Henrik Semb

10:45–11:15 Harnessing Insights about Human Pancreatic  
Development to Improve Cell Replacement  
Therapy for Diabetes

 Julie Sneddon, UCSF School of Medicine


11:15–11:45 Regulation of pancreatic cell fates and  
tissue dynamics

 Francesca Spagnoli, King's College London

11:45–12:00 Beta cell senescence: emerging lessons and  
therapeutic opportunities in Type 1 Diabetes

 Peter Thompson, University of Manitoba

12:00–12:15 Epigenomic control of cell state governs  
beta cell adaptation and failure

 Matthew Wortham, University of California  
San Diego

12:15-13:00 **Lunch**

**13:00 -14:00 Flash Talk Session 1**

14:00-14:30 **Coffee**

**14:30 -15:30 Session 2**

**Genetics of Diabetes**

Chaired by Heiko Lickert and Michele Solimena

14:30-15:00 Cellular & Molecular Mechanisms of Beta-cell Failure in Type 2 Diabetes

 **Anna Gloyn, Stanford University**

15:00-15:15 Genetics and genomics of type 1 diabetes

 **Kyle Gaulton, University of California San Diego**

15:15-15:30 Novel Insights Into Beta-Cell Survival From Whole Genome Sequencing

 **Elisa de Franco, University of Exeter**



# Program Thursday September 28

08:30–09:00 **Coffee**

## 09:00–10:45 **Session 3**

### **Insulin Sensitivity and Nutrition**

Chaired by Henriette Uhlenhaut and  
Alexander Bartelt

09:00–09:30 GPR75 Null Prevents Diet-Induced Obesity

 **Lora Heisler, University of Aberdeen**

09:30–10:00 Cellular Energy Sensing and Metabolism

 **Greg Steinberg, McMaster University**

10:00–10:15 Novel Biological Roles of Sirtuin 4

 **Frank Huynh, San Jose State University**

10:15–10:30 Endocytosis in Systemic Energy Metabolism  
and Diabetes

 **Anja Zeigerer, Helmholtz Munich**

10:30–10:45 Metabolic compartmentalization and  
the control of cellular metabolism

 **Nora Kory, Harvard University**

10:45–11:15 **Coffee**






## 11:15–12:15 **Flash Talk Session 2**

12:15–13:45 **Lunch**

## 13:45–15:45 Session 4

### Adipose Tissue and Lipid Metabolism

Chaired by Siegfried Ussar and Anastasia Georgiadi

- 13:45–14:15 Diet, Fat and Metabolic Disease  
 **Matthew Rodeheffer, Yale School of Medicine**
- 14:15–14:45 UCP1-Independent Mechanisms Controlling Energy Homeostasis  
 **Shingo Kajimura, Harvard Medical School**
- 14:45–15:15 Ucp1-Independent Thermogenesis: Molecular Mechanisms and Relationship to UCP1  
 **Lawrence Kazak, McGill University**
- 15:15–15:30 Adipose tissue immune cells and impaired metabolism in the aged  
 **Christina Camell, University of Minnesota**
- 15:30–15:45 How cells recycle fat:  
 Selective autophagy of lipid droplets  
 **Jeeyun Chung, Harvard University**





# Program Thursday September 28

15:45–16:15

**Coffee**

## 16:15–17:30 Session 5

### **Central Control of Metabolism**

Chaired by Paul Pfluger and Timo Müller

16:15–16:45

The role of GIPR cells of the CNS in regulating feeding behaviour

 **Alice Adriaenssens, Cambridge Neuroscience**

16:45–17:00

Dissecting Obesity-Mediated Dysregulation of The Gut-Brain Axis.

 Lisa Beutler, Northwestern University

17:00–17:15

Neural control of the sickness state

 Anoj Ilanges, Janelia Research Campus

17:15–17:30

Appetite and Body Weight Control via Caudal Brainstem Circuits


 Giuseppe D'Agostino, University of Manchester

## 18:00–21:00 Networking Reception

(open for registered participants)

19:30–19:45:

New strategies to attract and develop talents in health care science

 Gerd Maass, Roche, Senior Vice President Scientific Partnerships





# Program Friday September 29

08:30–09:00 **Coffee**

## 09:00–10:00 **Session 6**


### **Mitochondria and Metabolic Diseases**

Chaired by Kenneth Dyar and Matthias Blüher

09:00–09:30 A Biochemical Mechanism of Lactate Control  
Over Protein Function: Implications for Metabolic  
Regulation in Physiology

 **Edward Chouchani, Harvard University**

09:30–10:00 Using Data-Driven Hypotheses For  
Metabolic Gene Discovery

 **Matthew Hirschey, Duke Molecular  
Physiology Institute**


10:00–10:30 **Coffee**

## 10:30–12:00 **Session 7**

### **Neuroendocrinology of Diabetes**

Chaired by Sonja Schriever and Nathalia Pellegata

10:30–11:00 Algorithms for Appetite

 **Scott Sternson, University of California  
San Diego**

11:00–11:30 Neural Control of Glucose Metabolism

 **Sarah Stanley, Mount Sinai Hospital New York**

11:30–12:00 Brainstem Circuits that Control Ingestion

 **Zachary Knight, University of California  
San Francisco**





# Program Friday September 29

12:00–13:30 **Lunch**

13:30–14:30 **Flash Talk Session 3**

14:30–15:00 **Coffee**

15:00–16:00 **Session 8**

## **Epigenetics and Metabolic Health**

Chaired by Merly Vogt and Raffaele Teperino

15:00–15:30 Influence of the Lifestyle on the Sperm Epigenome

 **Romain Barrès, University of Copenhagen**

15:30–16:00 Epigenetic Heterogeneity Defines Metabolic Disease and Cell Sub types

 **Andrew Pospisilik, Van Andel Institute**

16:00–16:30 **Coffee**

16:00–17:15 **Closing Awards Ceremony**

16:30–17:30 The helmholtz diabetes lecture -  
sponsored by the DZD

**Chair: Henriette Uhlenhaut**

Nuclear receptors—diabetes and the challenge  
of overcoming Insulin resistance

**Ron Evans, salk institute for biological studies**

17:30–17:35 Presentation of the HelDi awards

17:35–17:40 Helmholtz best EMBO J flash-talk award

17:40–17:45 Closing remarks

# Speakers

## Helmholtz Diabetes Lecture

Ronald Evans

Salk Institute for Biological Studies

## Plenary Speakers

Alice Adriaenssens

Cambridge Neuroscience, UK

Romain Barrès

University of Copenhagen, Denmark

Edward Chouchani

Harvard University, USA

Anna Gloyn

Stanford University, USA

Lora Heisler

University of Aberdeen, UK

Matthew Hirschey

Duke Molecular Physiology Institute, USA

Shingo Kajimura

Harvard Medical School, USA

Lawrence Kazak

McGill University, Canada

Zachary Knight

University of California San Francisco, USA

Andrew Pospisilik

Van Andel Institute, USA

Matthew Rodeheffer

Yale School of Medicine, USA

Mikael Ryden

Karolinska Institut, Sweden - Keynote Lecture

Julie Sneddon

University of California San Francisco, USA

Francesca Spagnoli

King's College London, UK

Sarah Stanley

Mount Sinai Hospital New York, USA

Gregory Steinberg

McMaster University, Canada

Scott Sternson

University of California San Diego, USA



# Award Nominees / Short Talks

## HelDi\* – Award Nominees / Short Talks

Lisa Beutler	Northwestern University
Frank Huynh	San Jose State University
Kyle Gaulton	UCSD
Nora Kory	Harvard University
Elisa De Franco	University of Exeter
Anoj Ilanges	Janelia Research Campus
Christina Camell	University of Minnesota
Matthew Wortham	Sander Laboratory
Peter Thompson	University of Manitoba
Anja Zeigerer	Helmholtz Munich
Jeeyun Chung	Harvard University
Giuseppe D'Agostino	University of Manchester

\* Helmholtz Young Investigator in Diabetes Award.

The HelDi Award jury is a scientific panel consisting of independent scientists.



# Award Committee / Organizing Committee

## HeDi\* – Award Committee

Scott Sternson

Julie Sneddon

Henriette Uhlenhaut

Andreas Birkenfeld

Carolin Daniel

Paul Pfluger

Siegfried Ussar

Alexander Bartelt

## Conference Organizers

Stephan Herzig, Helmholtz Munich

Matthias Hebrok, Helmholtz Munich

Henrik Semb, Helmholtz Munich

## Conference Office

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# Cooperation Partner

We are grateful for the support of the conference by



**DZD**  
German Center for  
Diabetes Research

**The German Center for  
Diabetes Research (DZD)**

The German Center for Diabetes Research (DZD) is one of six German centers of health research. It brings together experts in the field of diabetes research and combines basic research, epidemiology and clinical applications. Using a novel, integrative research approach, the DZD seeks to make a major contribution to developing a successful, personalized prevention, diagnosis and treatment of diabetes mellitus. The members of the network are Helmholtz Munich, the German Diabetes Center (DDZ) in Düsseldorf, the German Institute of Human Nutrition (DIfE) in Potsdam-Rehbrücke, the Institute for Diabetes Research and Metabolic Diseases of Helmholtz Zentrum München at the University of Tübingen and the Paul Langerhans Institute Dresden of Helmholtz Zentrum München at the TU Dresden Medical Center, associated partners at the universities in Heidelberg, Cologne, Leipzig, Lübeck and Munich as well as additional project partners.

[www.dzd-ev.de](http://www.dzd-ev.de)

We would like to thank the DZD for being a cooperation partner of the Helmholtz Diabetes Conference and for sponsoring the Helmholtz Diabetes Lecture, this year awarded to Prof. Rudolf Zechner of the University of Graz.



# Cooperation Partner

**Roche**



From developing diagnostics and treatments, to harnessing the power of data to shape innovations of the future, Roche is an integrated healthcare company with a culture of integrity, courage and passion.

For over 125 years, they've been developing diagnostics and medicines for a wide range of chronic and life-threatening health conditions that continue to revolutionise healthcare. Being a family-owned company allows them to focus on long-lasting investments, take greater risks and explore innovative new ways to improve people's health around the world.

As a global leader in healthcare, Roche is one of the world's largest biotech companies and the leading supplier of in-vitro diagnostics. They are innovating across major disease areas, including oncology, neurology, infectious diseases, and ophthalmology. They've partnered with many forward-thinking, entrepreneurial and groundbreaking organisations that have one thing in common - the belief that cutting-edge science and technology can and will improve human health.

# Platinum Supporter

## **Sable Systems**

**Sable Systems -**

**By scientists, for scientists**



Sable Systems is the world's most trusted provider of tools and expertise for research in the metabolic sciences. The company provides integrated platforms for metabolic and behavioral phenotyping and testing (e.g. BAT activation, gut microbiota, ingestive behavior) of animal models of diabetes and other obesity-related diseases, enhancing a true translational approach from animal models to man. Only Sable Systems spans the entire model range, from microbiome to Drosophila, rodent to human.

Sable Systems is eliminating the disconnect between scientists and the people who develop their instruments. We merge authoritative expertise in metabolic physiology and biophysics with an inventive spark to create precision tools for metabolic measurement, neurophysiology and environmental science. The Promethion Core™ metabolic and behavioral measurement system for rodent research delivers highest resolution data regardless of study size. This enables greater statistical power with fewer animals and simultaneous testing of more hypotheses. The integrated data platform features continuous live evaluation of system performance, animal welfare and data quality at a glance.

Systems can be expanded by cutting-edge features like analysis of stable isotopes or high-precision methane monitoring at any time.





# General Information

## Conference Venue

Münchner Künstlerhaus  
Lenbachplatz 8  
80333 Munich, Germany

The Künstlerhaus, located in the heart of Munich, was conceived as a meeting place for artists and society alike and is still living proof of the style and society model of its time of origin when prince regent Luitpold opened the house to the public in 1900.

After some glorious decades of festivities, masked balls and banquets the house burned down following a bombing raid in 1944. It was rebuilt and re-opened to the public by Duke Albrecht of Bavaria on October 1, 1961. Today it is open for a wide variety of congresses, festivities, and exhibitions.



## Parking

Drive into the city center and follow the signs to „Karlsplatz (Stachus)“. Lenbachplatz connects to Stachus in the direction of Maximiliansplatz. The underground car park at Karstadt Oberpollinger in Maxburgstraße is open throughout.



# General Information

## Mediacheck

Please hand in your presentation, latest in the last break before your talk, directly to the technician in the Festsaal (conference hall) and check for complete and fluent presentation on the computer system provided.

## Photography

By participating or attending this event, you agree that you may appear on photos and/or videos which might be used for Helmholtz Munich's public relations activities. You have the right to object, on grounds relating to your particular situation, at any time during the processing of your personal data. In order to object to the processing of personal data, you should address your request to the organization team at: [info@helmholtz-muenchen.de](mailto:info@helmholtz-muenchen.de)

## WiFi

Network: mkh\_gast

Password: willkommen

## Networking Reception

September 28, 2023 18:00–21:00

Lenbachplatz 2, 80333 Munich



# Location Map



## Getting to the Conference Venue

The Münchner Künstlerhaus is located in the center of the city and easily reached by public transportation:

**U-Bahn U4 and U5**, stop: Karlsplatz/Stachus  
(2-5 min from venue)

**S-Bahn all lines**, stop: Karlsplatz/Stachus  
(2-5 min from venue)

**Tram No. 19**, stop: Lenbachplatz  
(2-3 min from venue)



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