



HelmholtzZentrum münchen

German Research Center for Environmental Health



The 8th Helmholtz Diabetes Conference

Diabetes – Genetics & Epigenetics

May 10 – 12, 2021

Cooperation Partner

We would like to thank the DZD for supporting this year`s Helmholtz Diabetes Lecture!



DZD
Deutsches Zentrum
für Diabetesforschung

DZD10
YEARS
#DIABETES
RESEARCH

The German Center for Diabetes Research (DZD)

The German Center for Diabetes Research (DZD) brings together experts in the field of diabetes research and combines basic research, translational research, epidemiology and clinical applications. The aim of the DZD is to develop novel strategies for successful, personalized detection, prevention and treatment of diabetes and its complications. Members of the DZD are Helmholtz Zentrum München - German Research Center for Environmental Health, the German Diabetes Center in Düsseldorf, the German Institute of Human Nutrition in Potsdam-Rehbrücke, the Paul Langerhans Institute Dresden of the Helmholtz Zentrum München at the University Medical Center Dresden and the Institute for Diabetes Research and Metabolic Diseases of the Helmholtz Zentrum München at the University of Tuebingen together with associated partners at the Universities in Heidelberg, Cologne, Leipzig, Lübeck and Munich.
www.dzd-ev.de

Welcome Note

Dear Friends and Colleagues

Welcome to the 8th Helmholtz Diabetes Conference, which this year focuses on the genetic and epigenetic mechanisms associated with the development of diabetes.

We have put together a great program with the participation of excellent speakers, who will present and discuss the latest developments in the field.

Like every year, we will host the Helmholtz Young Investigator in Diabetes competition (HeIDI) with selected talks by rising stars in the field of diabetes.

Susan Bonner-Weir (Harvard University) will give the Helmholtz Diabetes Lecture and will receive the award in recognition of her lifetime achievements.

We wish you a pleasant conference and we look forward to seeing you virtually!

Best Regards,

Stephan Herzig, Martin Hrabě de Angelis, Robert Schneider

Program

Monday, May 10th

11:45 –12:20 Welcome and Opening Remarks

11:45 –11:50 **STEPHAN HERZIG, Helmholtz Center Munich**
Opening note

11:50 –11:55 **MATTHIAS TSCHÖP, Helmholtz Center Munich**
Message from the Helmholtz Munich CEO

11:55 –12:10 **ANJA KARLICZEK**
Welcome remarks from the Federal minister of education and research

12:10 –12:20 **STEPHAN HERZIG, Helmholtz Center Munich**
Introduction to the conference

12:20 –12:45 Opening Keynote Lecture

Chair: Stephan Herzig

ELEFThERIA ZEGGINI, Helmholtz Center Munich
Next generation association studies of cardiometabolic traits

12:45 –13:00 Virtual Coffee Break

13:00 –14:15 Session 1: Neuronal control of metabolism (1)

Chairs: Timo Müller and Natalia Pellegata

13:00 –13:25 **JENS BRÜNING, MPI for Metabolism Research**
Molecular and functional characterization of heterogenous POMC-neuron classes

13:25 –13:50 **SADAF FAROOQI, University of Cambridge**
The hunger genes – lessons from obesity and thinness

13:50 –14:15 **RANDY SEELEY, University of Michigan**
Progress and pitfalls in identifying the molecular mechanisms for the potent effects of bariatric surgery

14:15 –14:45 Virtual Coffee Break

14:45 –15:50 Session 2: Epigenetics and pharmacogenomics

Chairs: Annette Peters, Raffaele Teperino

14:45 –15:10 **J. ANDREW POSPISILIK, Van Andel Institute**
Probabilistic and intergenerational mechanisms of metabolic disease susceptibility

HelDi nominees:

15:10 –15:20 **KATRIN FISCHER, Sanofi**
Transcriptional effects of recurrent hypoglycemia in Streptozotocin-induced T1D mice

15:20 –15:30 **QI CHEN, University of California**
Sperm RNA code: how many secrets in programming offspring metabolic health

15:30 –15:40 **KYLE GAULTON, University of California San Diego**
Interpreting type 1 diabetes genetics using single cell epigenomics

15:40 –15:50 HelDi discussion round

15:50 –16:20 Virtual Coffee Break

16:20 –17:40 Session 3: Adipose tissue

Chairs: Siegfried Ussar, Anja Zeigerer



16:20 –16:45 **PHILIPP SCHERER, University of Texas Southwestern**
Adipose tissue – Therapeutic target for diabetes and beyond

16:45 –17:10 **ANDREAS STAHL, University of California Berkeley**
Organ-on-a-chip solutions for diabetes research

Program

Monday, May 10th

HelDi nominees:


- 17:10 -17:20  **QIONG (ANNABEL) WANG**, City of Hope National Medical Center
Adipose tissue remodeling and cellular heterogeneity
- 17:20 -17:30  **JANG CHOLSOON**, University of California Irvine
Metabolic flux in brown fa
- 17:30 -17:40 HelDi discussion round

Program


Tuesday, May 11th

11:00 -11:55 **Session 4: Genetics of type 1 diabetes**

Chairs: Anette Ziegler, Mostafa Bakhti

11:00 -11:25  **JOHN A. TODD**, University of Oxford
How has genetics helped us approach prevention of type 1 diabetes?

HelDi nominees:


11:25 -11:45  **ELISA DE FRANCO**, University of Exeter
Using gene discovery to understand human beta-cells development and function

11:45 -13:00 Virtual Lunch Break





13:00 -13:55 **Session 5: Cell Metabolism, Diabetes and Cancer**

Chairs: Mauricio Berriel-Diaz, Fabiana Perocchi

13:00 -13:25  **KATHRYN WELLEN**, University of Pennsylvania
Metabolic compartmentalization and chromatin modification

HelDi nominees:

13:25 -13:35  **MARIA ROHM**, Helmholtz Zentrum München
How fat talks - the role of lipids in cancer and metabolic disease

13:35 -13:45  **EDWARD T. CHOUCANI**, Harvard Medical School
Why succinate? A model for physiological regulation by the mitochondrial bioenergetic sentinel

13:45 -13:55 HelDi discussion round

Program Tuesday, May 11th

13:55 -14:30 Virtual Coffee Break



14:30 -15:25 Session 6: Neuronal control of metabolism (2)

Chairs: Sonja Schriever, Natalie Krahrmer


14:30 -14:55

 **JEFFREY FRIEDMAN, Rockefeller University**


Leptin mediated regulation of adipose tissue innervation

HeDi nominees:

14:55 -15:05

 **LISA BEUTLER, Northwestern University**
Regulation of appetite by gut-brain communication

15:05 -15:15

 **SOPHIE STECULORUM, MPI for Metabolism Research**
Programming sensory regulation of metabolism

15:15 -15:25

HeDi discussion round


15:25 -16:00 Virtual Coffee Break



16:00 -16:55 Session 7: Lipid homeostasis and insulin secretion


Chairs: Henrik Semb, Ingo Bartscher

16:00 -16:25


 **RONALD EVANS, Salk Institute**
Suppression of Lipolysis by FGF1 Overcomes Insulin Resistance

HeDi nominees:

16:25 -16:35

 **BENGT-FREDERIK BELGARDT, German Diabetes Center**
The role of sphingolipids in insulin secretion and diabetic beta cell dysfunction

16:35 -16:45

 **KATRIN SVENSSON, Stanford University**
Hormone discovery: control of glucose and lipid homeostasis through insulin-independent pathways

16:45 -16:55

HeDi discussion round

16:55 -17:30 Virtual Coffee Break



17:30 -18:30

Flash Talk Presentations sponsored by Molecular Metabolism

Program Wednesday, May 12th

12:00 -13:15

Session 8: Genetics of Diabetes

Chairs: Alberto Cebrian Serrano, Martin Hrabě de Angelis

12:00 -12:25

 **SIR STEPHEN O'RAHILLY, University of Cambridge**


How does the brain sense the health and nutritional state of the body; some new insights

12:25 -12:50

 **ANDREW HATTERSLEY, University of Exeter Medical School**

Learning about the role of insulin in fetal growth from human knockouts

12:50 -13:15

 **MITCH LAZAR, University of Pennsylvania**
Functional natural variation at nuclear receptor regulated enhancers in the human genome

13:15 -14:00

Virtual Coffee Break



Program

Wednesday, May 12th

14:00 -15:15 Session 9: Epigenetics of Diabetes

Chairs: Robert Schneider, Daphne Cabianca

14:00 -14:25  **ROMAIN BARRÈS, University of Copenhagen**

DNA methylation profiling of single spermatozoa from lean and obese humans

14:25 -14:50  **SARAH KIMMINS, McGill University**

A Tale of Mice and Men: The Influence of Obesity on the Sperm Epigenome and the Inheritance of Metabolic Disorders

14:50 -15:15  **OLIVER RANDO, University of Massachusetts Medical School**

Effects of paternal diets and stressors on offspring metabolism

15:15 -15:45 Virtual Coffee Break



15:45 -17:00 Session 10: Hormone action

Chairs: Kenneth Dyar, Henriette Uhlenhaut

15:45 -16:10  **C. RONALD KAHN, Harvard Medical School**

Defining the cellular and molecular basis of insulin resistance in human type 2 diabetes using a disease-in-a-dish model

16:10 -16:35  **DAN DRUCKER, University of Toronto**

GLP-1 action - From where and how?

16:35 -17:00  **HEI SOOK SUL, University of California Berkeley**


Maintaining health adipose tissue- role of Aifm2 and ARCs

17:00 -17:30 Virtual Coffee Break



17:30 -18:00 The Helmholtz Diabetes Lecture supported by the DZD

Chair: Heiko Lickert

 **SUSAN BONNER-WEIR, Harvard University**
The ever changing beta cell

18:00 -18:05 HelDi Award Presentation

18:05 -18:10 Helmholtz Best Abstract Prize Presentation

18:10 -18:15 Closing Remarks

18:15 End of Conference

Sponsor



Sable Systems

Sable Systems is the world's most trusted provider of tools and expertise for research in the metabolic sciences. Sable 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.

The Promethion Core™ phenotyping platform enables greater statistical power with fewer animals and simultaneous testing of different hypotheses.

The new Promethion LIVE Software at first glance visualizes the data you require in your daily routine as a researcher, scientific technician, animal caretaker, student...

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.

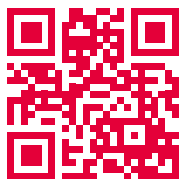
Sable Systems - By scientists, for scientists

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Speakers

2021 CONFIRMED SPEAKERS

Romain Barrès University of Copenhagen

Susan Bonner-Weir Harvard University

Jens Brüning MPI for Metabolism Research

Dan Drucker University of Toronto

Ronald Evans Salk Institute

Sadaf Farooqi University of Cambridge

Jeffrey Friedman Rockefeller University

Andrew Hattersley University of Exeter Medical School

C. Ronald Kahn Harvard Medical School

Sarah Kimmins McGill University

Mitch Lazar University of Pennsylvania

Sir Stephen O'Rahilly University of Cambridge

J. Andrew Pospisilik Van Andel Institute

Oliver Rando University of Massachusetts Medical School

Philipp Scherer University of Texas Southwestern

Randy Seeley University of Michigan

Andreas Stahl University of California Berkeley

Hei Suk Sul University of California Berkeley

John A. Todd University of Oxford

Kathryn Wellen University of Pennsylvania

Eleftheria Zeggini Helmholtz Center Munich

Award Nominees / Short Talks

HeIDI* – Award Nominees / Short Talks

Bengt-Frederik Belgardt German Diabetes Center
Lisa Beutler Northwestern University
Qi Chen, University of California
Edward T. Chouchani Harvard Medical School
Jang Cholsoon University of California Irvine
Elisa De Franco University of Exeter
Katrin Fischer Sanofi
Kyle Gaulton University of California San Diego
Maria Rohm Helmholtz Center Munich
Sophie Steculorum MPI for Metabolism Research
Irina Stefana University of Oxford
Katrin Svensson Stanford University
Qiong (Annabel) Wang City of Hope National Medical Center

* HeIDI = Helmholtz Young Investigator in Diabetes Award. The HeIDI Award jury is a scientific panel consisting of independent scientists.

Award Committee / Organizing Committee

HeIDI* – Award Committee

Sadaf Farooqi (Chair)
Ele Zeggini
Henriette Uhlenhaut
Timo Müller
Annette Peters
Henrik Semb
Heiko Lickert
Anette Ziegler
Mauricio Berriel-Diaz
Siegfried Ussar
Matthias Blüher
Andreas Birkenfeld

Conference Organizers

Stephan Herzig
Martin Hrabě de Angelis
Robert Schneider
Helmholtz Zentrum München

* HeIDI = Helmholtz Young Investigator in Diabetes Award. The HeIDI Award jury is a scientific panel consisting of independent scientists.

Sponsor



TSE Systems

TSE is the market leader and most innovative and comprehensive solutions provider of phenotyping equipment for metabolic and behavioral research, integrated wireless telemetry, and inhalation toxicology.

We do not follow. We work in close collaboration with top researchers and opinion leaders worldwide; our multidisciplinary team of scientists and engineers anticipates trends in science and translates these into research tools. For 125 years, we have been designing and creating innovative solutions for preclinical in-vivo biomedical research.

We build the most modular, scalable, and robust equipment for your scientific needs. Let our trusted and legendary experience help you achieve the next breakthrough in science!

Better data through better life, better life yields better data.

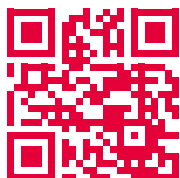
Our next generation system PhenoMaster offers a variety of modules that can be flexibly employed in accordance with your research goal.

Whether you are researching diabetes, obesity, cancer, or anything else, the PhenoMaster is the right tool to bring your research to the next level.

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General Information

as of April 26, 2021

Media Library

The conference will be recorded and all talks will be available after the congress.

Conference Office

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phone: +49 341 30 88 84 - 82

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e-mail: DIAB@eventlab.org

Virtual Cafeteria

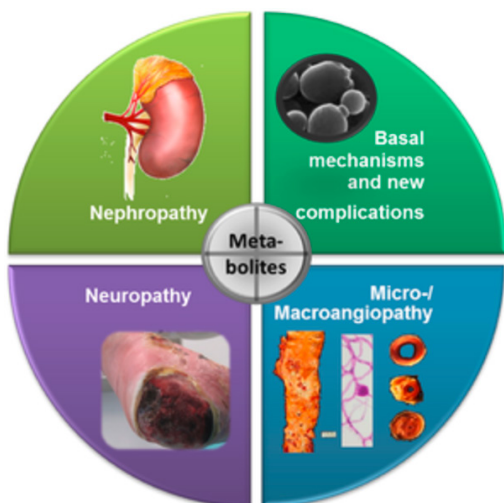
Meet colleagues and share the latest insights and innovations in our virtual lounge during the breaks.

Live Stream Studio

The event will be broadcasted from our virtual studio at the Helmholtz Diabetes Center.



Partner



CRC 1118 “Reactive Metabolites as a cause of diabetes complications”

The CRC 1118 “Reactive Metabolites as a cause of diabetes complications” is an interdisciplinary network of researchers that investigates the cause and development of late complications in diabetic disorders. It has been shown that the development of complications can neither be explained or predicted solely by an individual’s blood glucose or HbA1c.

The CRC 1118 seeks to understand this disconnection between glucose and complications by focusing on the role of intracellular reactive metabolites in mediating cellular dysfunction and organ damage.

To achieve this aim, the consortium has three corner stones; the first tries to understand the mechanisms by which reactive metabolites are increased and accumulate in diabetes. The second is the study of how reactive metabolites induce cellular dysfunction through interactions with the DNA and proteins of a cell and the third studies the enzymatically-dependent pathways which control the formation and accumulation of reaction metabolites.

Through these corner stones it is anticipated that the development of complications can be prevented and that already existing complications would be driven into remission.

CRC 1118 is supported by the German Research Foundation (DFG).