



HelmholtzZentrum münchen

German Research Center for Environmental Health

"Gliovascular interface" ©Tim Gruber, Institute for Diabetes and Obesity (IDO), Helmholtz Zentrum München

The 6th Helmholtz Diabetes Conference

September 26–28, 2018

Palais Lenbach, Munich, Germany

Topics

Systems Metabolism

From Leptin to Future Therapies

Adipose Tissue

Neuroendocrine Control

Endocrine Signals

Hypothalamus and Metabolic Control

(Epi-)Genetics of Diabetes

CNS Control of Systems Metabolism

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#HelmholtzDiabetes2018

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RESEARCH FOR GRAND CHALLENGES

Welcome Note

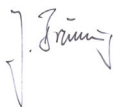
Dear Friends and Colleagues

We are excited to welcome you to our 6th Helmholtz Diabetes Conference. On the heels of the success of the past five conferences, we are 2018 continuing for the sixth time this recurring high-impact meeting 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. In 2018, we will focus on the role of the brain in metabolic control uncovering the cell type diversity and functional heterogeneity of hypothalamic regulatory circuits to allow dissecting, targeting and improving the CNS control of metabolism.

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

Matthias & Jens



Program

Wednesday, September 26


08:45–10:15 Registration

10:15–10:30 Welcome and Opening Remarks

Matthias Tschöp, Helmholtz Zentrum München
& Jens Brüning, Max Planck Institute for
Metabolism Research

10:30–11:00 Opening Keynote Lecture

Chair: Matthias Tschöp

 **MAGDALENA GÖTZ, Helmholtz Zentrum
München**

Direct (neuronal) reprogramming – a road to
replacement therapy?

11:00–12:45 Session 1: Systems Metabolism (1)

Chairs: Heiko Lickert, Henriette Uhlenhaut

11:00–11:30

 **KLAUS KAESTNER, University of Pennsylvania**

Targeting epimutations to increase human
beta-cell proliferation

11:30–12:00

 **MARTIN KLINGENSPOR, Technical University
of Munich**


Post-prandial secretin release triggers an
endocrine gut – brown fat – brain – axis in the
control of satiation

12:00–12:15

 **FABIANA PEROCCHI, Helmholtz Zentrum
München**

Mitochondria as sensors and modulators of
calcium – dependent metabolism and cell death

12:15–12:30

 **ADELHEID LEMPRADL, Van Andel Research
Institute**

Intergenerational inheritance of metabolic state

12:30–12:45

 **ALEXANDER SOUKAS, Harvard Medical School**

Ancient genetic pathways and the health
promoting effects of metformin

12:45-13:45

Lunch Break



13:45-15:15 Session 2: From Leptin to Future Therapies

Chairs: Martin Hrabě De Angelis, Stephan Herzig

13:45-14:15

 **JEFFREY FRIEDMAN, Rockefeller University**

Regulation of leptin gene expression and the pathogenesis of hypoleptinemic obesity

14:15-14:45

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

Leptin... there's life in the old dog yet...but there's also a new puppy in the pack

14:45-15:15

 **RICHARD DIMARCHI, Indiana University**

Chemical evolution of endocrine hormones for treatment of the metabolic syndrome

15:15-15:45

Coffee Break



15:45-17:15 Session 3: Adipose Tissue

Chairs: Matthias Blüher, Siegfried Ussar

15:45-16:15

 **PHILIPP SCHERER, University of Texas Southwestern**


Adipose tissue and its impact on systemic metabolic homeostasis

16:15-16:45

 **ANA DOMINGOS, University of Oxford**


Sympathetic neuroimmunity in obesity

16:45-17:00

 **WENWEN ZENG, Center for Life Sciences**

Neural regulation of white adipose tissue metabolism

17:00-17:15

 **ZACH GERHART-HINES, University of Copenhagen**

Control of systemic energy homeostasis through thermogenic adipose tissue

17:15

End of Day 1

Speaker's Dinner

Munich City Tours

(optional event for conference attendees)

Program

Thursday, September 27

08:00–08:30 Coffee



08:30–10:00 Session 4: Neuroendocrine Control (1)

Chairs: Susanna Hofmann, Timo Müller

08:30–09:00



MICHAEL SCHWARTZ, University of Washington

Brain control of glucose homeostasis: implications for the future of diabetes treatment

09:00–09:15



MARC CLARET, Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS)

Mitochondrial dynamics in POMC neurons: a key nexus for metabolic health

09:15–09:30



CARRIE FERRARIO, University of Michigan

Why did I eat that? Changes in brain and motivation that drive obesity

09:30–09:45



JONATHAN FLAK, University of Michigan

Identifying the VMN neurons that control hepatic glucose output

09:45–10:00



JARRAD SCARLETT, University of Washington

Mechanisms mediating the sustained anti-diabetic action of FGF1 signaling in the brain

10:00–10:30 Coffee Break



10:30–12:00 Session 5: Systems Metabolism (2)

Chairs: Michael Ristow, Sheila Collins

10:30–11:00



MICHAEL CZECH, University of Massachusetts

Adipocyte to neuron crosstalk regulating systemic metabolism

11:00–11:15



MYRIAM AOUADI, Karolinska Institute

Macrophage contribution to insulin resistance independently of inflammation

11:15–11:30



STEPHEN LIBERLES, Harvard Medical School

Molecular and genetic analysis of the vagus nerve

11:30–11:45



MARTIN JASTROCH, Stockholm University
Solving paradoxical obesity–resistance in UCP1–deficient mice: FGF21-mediated routes to metabolic inefficiency

11:45–12:00



GOLNAZ VAHEDI, University of Pennsylvania
Tracking the evolution of type 1 diabetes at the single-cell level

12:00–14:00

Lunch Break



12:30–13:30

Data Blitz Presentations by young scientists

Moderated by: Christoph Schmitt (Chief Editor Nature Metabolism) & Vesna Todorovic (Senior Editor Nature) at the Main Conference Hall

14:00–15:45

Session 6: Endocrine Signals

Chairs: Giles Yeo, Paul Pfluger

14:00–14:30



RANDY SEELEY, University of Michigan
Neurocircuitry underlying the potent anorexic effects of GDF15

14:30–15:00



GILLES MITHIEUX, Université de Lyon
Intestinal gluconeogenesis and brain signaling: what could be the purpose

15:00–15:15



MARK HERMAN, Duke University
Sugar-induced metabolic disease: a mechanistic update

15:15–15:30



UMUT OZCAN, Harvard Medical School
Treatment of obesity and associated diseases with leptin sensitizers

15:30–15:45



CLEMENCE BLOUET, University of Cambridge
Brain protein sensing in the control of appetite and energy homeostasis

15:45–16:15

Coffee Break



16:15–17:30

Session 7: Hypothalamus and Metabolic Control

Chairs: Wolfgang Wurst, Kerstin Stemmer

16:15–16:45



JOEL ELMQUIST, University of Texas Southwestern
POMC neurons expressing leptin receptors: a link between fasting and leptin levels

16:45–17:00	 MICHAEL KRASHES , <u>The National Institute of Diabetes and Digestive and Kidney Diseases</u> Hunger gates orthogonal choice behavior
17:00–17:15	 MONICA DUS , <u>University of Michigan</u> Reprogramming of sweet taste by diet
17:15–17:30	 HENNING FENSELAU , <u>Max Planck Institute for Metabolism Research</u> POMC neurons promote satiety via synaptic plasticity
17:30–18:00	Coffee Break 
18:00–19:30	Session 8: Neuroendocrine Control (2) Chairs: Annette Schürmann, Serge Luquet
18:00–18:30	 JAVIER STERN , <u>Georgia State University</u> Novel cell biosensors for the study of stimulus-secretion coupling of brain neuropeptides
18:30–19:00	 STEPHANIE FULTON , <u>University of Montreal</u> Neural basis and therapeutic targets of mood deficits in obesity
19:00–19:15	 CRISTINA GARCÍA CACÉRES , <u>Helmholtz Zentrum München</u> Astrocyte-neuronal crosstalk in obesity
19:15–19:30	 SOPHIE STECULORUM , <u>Max Planck Institute for Metabolism Research</u> Novel regulators of the central control of feeding and systemic insulin sensitivity
19:30	Get-Together (for all conference attendees) at HEART restaurant and bar, building next door: Lenbachplatz 2, 80333 München
21:30	Special performance by The Sugar Daddies (open to everyone) at HEART restaurant and bar 

Program

Friday, September 28

08:30-09:00 Coffee



09:00-10:00 Session 9: (Epi-)Genetics of Diabetes

Chairs: Annette Peters, Michael Roden

09:00-09:30



MITCHELL LAZAR, University of Pennsylvania

Genetic variation and epigenetic modulation of metabolism

09:30-10:00



SADAF FAROOQI, University of Cambridge

Insights from the genetics of obesity and thinness

10:00-10:30 Coffee Break



10:30-12:00 Session 10: CNS Control of Systems Metabolism (1)

Chairs: Jovica Ninkovic, Stephanie Kullmann

10:30-11:00



MARTIN MYERS, University of Michigan

Coordination of food intake and metabolism by the hypothalamus and brainstem

11:00-11:30



LORI ZELTSER, Columbia University

Identifying a novel therapeutic target for anorexia nervosa

11:30-12:00



TAMAS HORVATH, Yale University







AgRP neurons control cortical development and complex behaviors

12:00-13:00 Lunch Break



12:00-13:00 Scientific Exchange Table - Meet the editors for informal scientific discussions at lunch area

nature
metabolism

13:00–15:00	Session 11: CNS Control of Systems Metabolism (2)
	Chairs: Jens Brüning, Sandrine Lefort
13:00–13:30	 LORA HEISLER, University of Aberdeen Targeting the nucleus of the solitary tract to control feeding
13:30–14:00	 SCOTT STERNSON, Janelia Research Campus The Neurobiology of need
14:00–14:30	 ZACHARY KNIGHT, University of California San Francisco Neural mechanisms of homeostasis
14:30–15:00	 BRADFORD LOWELL, Harvard Medical School Control of hunger by ARC → PVH hypothalamic circuits
15:00–15:30	Coffee Break 
15:30–16:15	The Helmholtz Diabetes Lecture
	Chair: Mathias Treier
	 SABRINA DIANO, Yale University Key role for brain mitochondria in systemic metabolism
16:15–16:20	HelDi Award Presentation
16:20–16:25	Helmholtz Best Abstract Prize Presentation
16:25–16:30	Closing Remarks
	Stephan Herzig, Helmholtz Zentrum München
16:30	End of Conference

Speakers

Helmholtz Diabetes Lecture

Sabrina Diano Yale University

Plenary Speakers

Michael Czech Univ. of Massachusetts

Sabrina Diano Yale University

Richard DiMarchi Indiana University

Ana Domingos Univ. of Oxford

Joel Elmquist Univ. of Texas Southwestern

Sadaf Farooqi Univ. of Cambridge

Jeffrey Friedman Rockefeller University

Stephanie Fulton Univ. of Montreal

Magdalena Götz Helmholtz Zentrum München

Lora Heisler Univ. of Aberdeen

Tamas Horvath Yale University

Klaus Kaestner Univ. of Pennsylvania

Martin Klingenspor Technical University of Munich

Zachary Knight Univ. of California San Francisco

Mitchell Lazar Univ. of Pennsylvania

Bradford Lowell Harvard Medical School

Gilles Mithieux Univ. de Lyon

Martin Myers Univ. of Michigan

Sir Stephen O'Rahilly Univ. of Cambridge

Philipp Scherer Univ. of Texas Southwestern

Michael Schwartz Univ. of Washington

Randy Seeley Univ. of Michigan

Javier Stern Georgia State University

Scott Sternson Janelia Research Campus

Lori Zeltser Columbia University

Award Nominees / Short Talks

HelDi* - Award Nominees / Short Talks

Myriam Aouadi Karolinska Institute

Clemence Blouet University of Cambridge

Marc Claret Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS)

Monica Dus University of Michigan

Henning Fenselau Max Planck Institute for Metabolism Research

Carrie Ferrario University of Michigan

Jonathan Flak University of Michigan

Cristina García Cáceres Helmholtz Zentrum München

Zach Gerhart-Hines University of Copenhagen

Mark Herman Duke University Medical Center

Martin Jastroch Stockholm University

Michael Krashes National Institute of Diabetes and Digestive and Kidney Diseases

Adelheid Lempradl Van Andel Research Institute

Stephen Liberles Harvard Medical School

Umut Ozcan Harvard Medical School

Fabiana Perocchi Helmholtz Zentrum München

Jarrad Scarlett University of Washington

Alexander Soukas Harvard Medical School

Sophie Steculorum Max Planck Institute for Metabolism Research

Golnaz Vahedi University of Pennsylvania

Wenwen Zeng Center for Life Sciences, Tsinghua

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

Award Committee / Organizing Committee

HelDi* -Award Committee

Wolfgang Wurst (Chair)

Matthias Blüher

Jens Brüning

Sheila Collins

Stephan Herzig

Susanna Hofmann

Heiko Lickert

Paul Pfluger

Annette Schürmann

Mathias Treier

Giles Yeo

Conference Organizers

Matthias Tschöp

Helmholtz Zentrum München, Germany

Jens Brüning

Max Planck Institute for Metabolism
Research Cologne, Germany

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

Cooperation Partner

We are grateful for the support of the conference by



DZD

Deutsches Zentrum
für Diabetesforschung

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 via an innovative, integrative research approach. Members of the network 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 Carl Gustav Carus Dresden and the Institute for Diabetes Research and Metabolic Diseases of the Helmholtz Zentrum München at the Eberhard-Karls-University of Tuebingen together with associated partners at the Universities in Heidelberg, Cologne, Leipzig, Lübeck and Munich. In 2015 the members of the Competence Network Diabetes mellitus were integrated as additional project partners.

For more information: www.dzd-ev.de

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TSE Systems has over 130 years of expertise in developing and manufacturing sophisticated life science research equipment. Today, using the latest technology, we are a leading supplier for comprehensive solutions in the fields of Metabolism, Behavior, Physiology and Inhalation Toxicology. Our integrated modular hard- and software platforms allows us to serve both individual customer needs, as well as meeting the accepted requirements in the field while adhering to the highest standards for quality, flexibility and user friendliness.

For more information: www.tse-systems.com

General Information

Conference Venue

Lenbach Palais
Ottostraße 6
80333 Munich, Germany

The event venue, Lenbach Palais is located in an historical 19th century palais. It is one of the few buildings in central Munich that was not destroyed in the war and its original architecture, including elegant marble floors and stucco ceilings, is still intact.

WiFi

Name: mycloud

Please open your browser to connect with the website.

Mediacheck

Please hand in your presentation, latest in the last break before your talk, directly to the technician in the Goblin-Hall (conference hall) and check for complete and fluent presentation on the computer system provided. If you prefer using your own computer or other systems as windows, please make sure to bring your own adapters!

Poster Exhibition

Digital posters are uploaded on screens located in the lunch break area at the conference venue and are exhibited for the first two days of the conference (September 26–27, 2018).

Photography

By participating or attending this event, you agree that you may appear on photos and/or videos which might be used for Helmholtz Zentrum München's public relations activities.

General Information

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

Parking

Some parking spaces are available directly in front of the conference venue. Please be aware that 2 hours are the maximum time for parking in these designated areas. Other basement car-parks are available in the near surroundings.

The Sugar Daddies live in concert

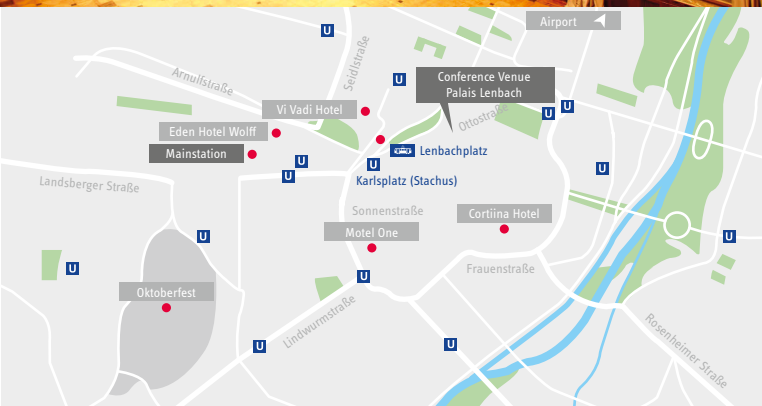
Sept. 27, HEART restaurant & bar at 21:30 h

Lenbachplatz 2, 80333 Munich

Please use the wristband for free entrance.

The exclusive club HEART is located in the building that housed Munich's old stock exchange, an historic, neo-Renaissance building built in 1896.

Location Map



Getting to the Conference Venue

The Palais Lenbach 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)

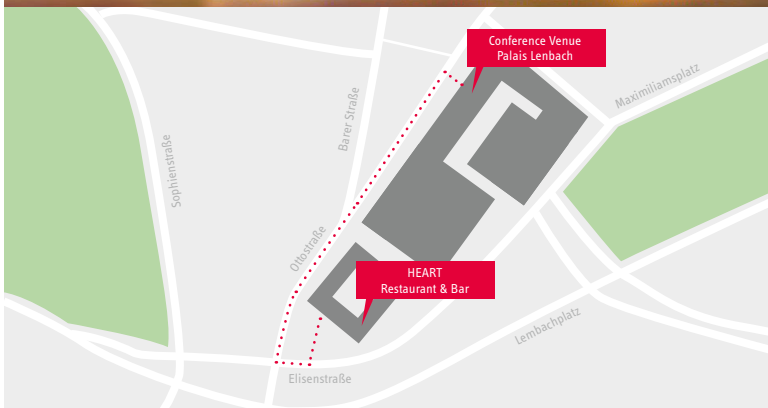
S-Bahn all lines, stop: Karlsplatz/Stachus (2-5 min from venue)

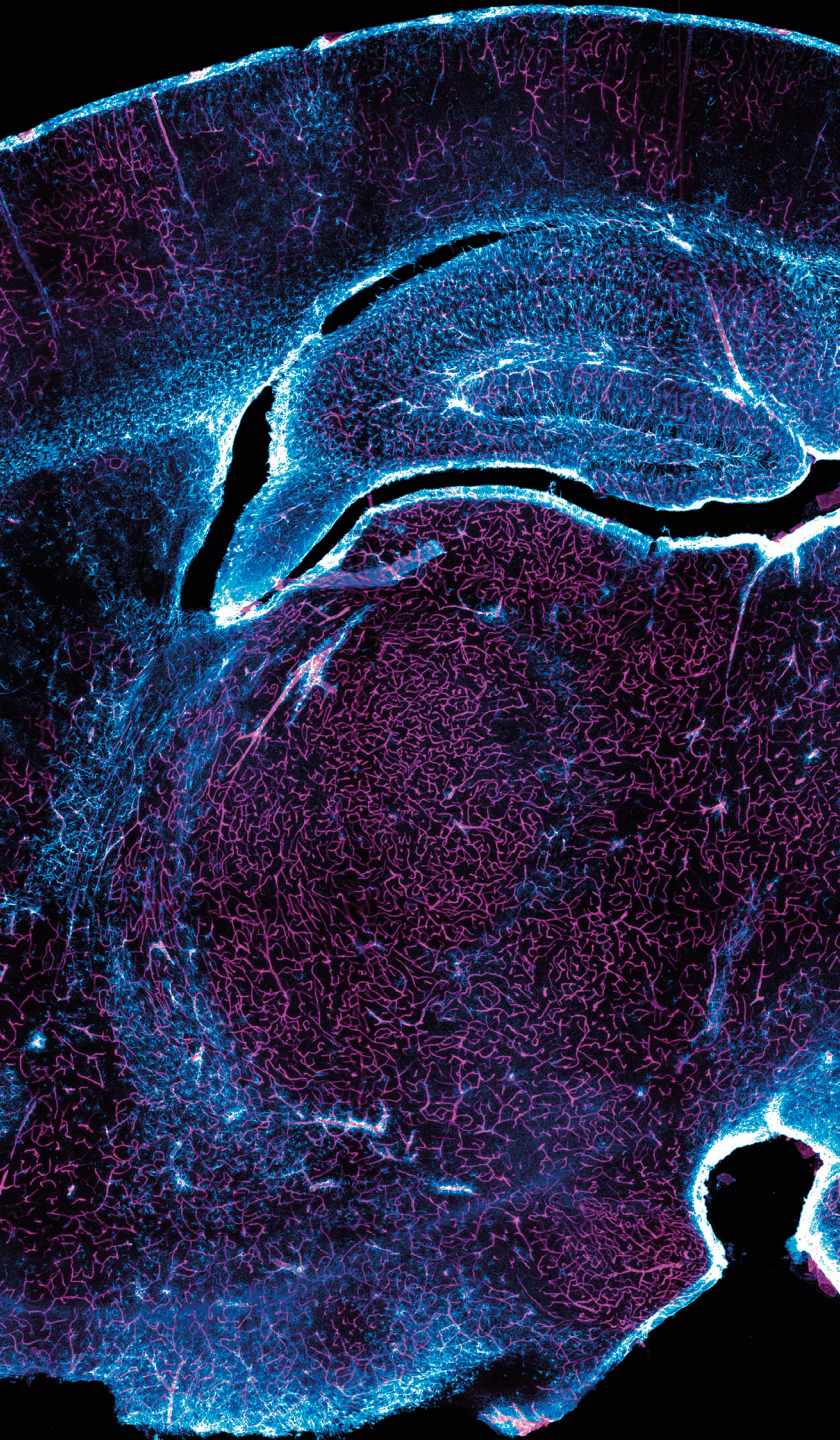
Tram No. 19, stop: Lenbachplatz (2-3 min from venue)

Tram No. 27, stop: Lenbachplatz (2-3 min from venue)



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