



13TH SWISS WINTER CONFERENCE

on

INGESTIVE BEHAVIOR

St. Moritz

Switzerland

11 February – 15 February 2023

ACKNOWLEDGEMENTS

The organizers gratefully acknowledge:

Research Diets, Inc.

20 Jules Lane

New Brunswick, NJ 08901

USA

<http://www.researchdiets.com/>

info@researchdiets.com

for a generous donation

Sable Systems International

3840 N. Commerce Street

North Las Vegas, NV 89032

USA

<http://www.sablesys.com/>

for a generous donation

ELSEVIER | Life Sciences, Journals
125 London Wall, London, EC2Y 5AS, UK
for a generous donation

PROGRAM

13th Swiss Winter Conference on Ingestive Behavior

11 February – 15 February 2023

- + - + - + - + - + - + - + - + - + -

Organizers

Thomas A Lutz
tomlutz@vetphys.uzh.ch

Barry Levin
levin@njms.rutgers.edu

- + - + - + - + - + - + - + - + - + -

Hotel Laudinella
Via Tegiatscha 17
CH-7500 St. Moritz
Switzerland

T +41 81 836 00 00
F +41 81 836 00 01
[**info@laudinella.ch**](mailto:info@laudinella.ch)

- + - + - + - + - + - + - + - + - + -

Registration and Apéro on Saturday are in the Lobbybar

Scientific sessions are in the Hannes-Reimann-Saal

Dinners are in various Hotel's restaurants, as described below

SCHEDULE
15min talk/15min discussion

- + - + - + - + - + - + - + - + - + - + -

SATURDAY 11.02.23

- 15.30 Registration**
- 15.50 Welcome & Introduction**
Thomas Lutz
- 16.10 – 18.30 Session #1, Neurons, glia and other brain topics**
Chair: Levin
Simerly, Heisler, Coester, Langlet, Navarro i Batista
- 18.30 Registration and Apéro** in the Lobbybar
- 19.15 Dinner** in the Stüva Restaurant

- + - + - + - + - + - + - + - + - + - + -

SUNDAY 12.02.23

- 08.00 Welcome & Introduction**
Thomas Lutz
- 08.10 – 11.00 Session #2, Ingestion**
Chair: Olszewski
Betley, Serra, Flad, Noble, Smith
- 17.00 – 19.30 Session #3, Obesity treatments**
Chair: Samson
Kotz, Heilbronn, Romano, Teyssere, Bordier
- 20.00 4-Course Dinner** in the Restaurant GourmIndia

- + - + - + - + - + - + - + - + - + - + -

MONDAY 13.02.23

- 08.00 – 11.00 Session #4, Metabolism, pregnancy and others**
Chair: Kotz
Ravussin, E., Ravussin, Y., van Dijk, Boyle, Widmer

- + - + - + - + - + - + - + - + - + - + -

17.00 – 19.30 Session #5, Bariatric surgery and other obesity treatments

Chair: Lutz

Al-Alsheikh, Rochford, Smolenskii, Alceste, Boccia

20.00 Dinner in the Stüva

- + - + - + - + - + - + - + - + - + -

Tuesday 14.02.23

08.00 – 11.00 Session #6, Gut-brain and endocrine controls

Chair: Ravussin, E.

Mansuy-Aubert, McDougale, Erlanson-Albertsson, Kolar, Pajot

- + - + - + - + - + - + - + - + - + -

17.00 – 19.30 Session #7, Peptides, hormones and amylin

Chair: Langhans

Samson, Le Foll, Mazzini, Yosten, Olszewski

20.00 Dinner, in the Restaurant Corvatsch

- + - + - + - + - + - + - + - + - + -

Wednesday 15.02.23

11.00 Check out and departure

Farewell !

Auf Wiedersehen !

Uf Wiederluege !

Sin seveser !

Arrivederci !

Au Revoir !

Effects of Bariatric Surgery and Dietary Interventions for Obesity on Brain Neurotransmitter Systems and Metabolism: A Systematic Review of Positron Emission Tomography (PET) and Single-Photon Emission Computed Tomography (SPECT) Studies

Alhanouf Al-Alsheikh, Alexander Miras, Tony Goldstone

PsychoNeuroEndocrinology Research Group, Division of Psychiatry, Department of Brain Sciences, Faculty of Medicine, Imperial College London, United Kingdom

Alhanouf Al Alsheikh
Department of Brain Sciences,
Hammersmith Hospital Imperial College London
Du Cane Road, London W12 0NN, UK
Alhanouf.alalsheikh@nhs.net

- + - + - + - + - + - + - + - + - + -

Four bottle preference test and drinking microstructure in patients with obesity before and over a 12-month period after RYGB

Daniela Alceste¹, Michele Serra¹, Daniel Gero¹, Bálint File², Andreas Thalheimer¹, Jeannette Widmer¹, Robert E. Steinert¹, Carel le Roux³, Alan C. Spector⁴, Marco Bueter¹.

¹ Department of Surgery and Transplantation, University Hospital Zurich, Rämistrasse 100, 8091, Zurich, Switzerland

² Faculty of Information Technology and Bionics, Pázmány Péter Catholic University, Budapest, Hungary

³ Department of Psychology and Program in Neuroscience, Florida State University, Tallahassee, FL 32306-4301, USA

⁴ Diabetes Complications Research Centre, Conway Institute, School of Medicine, University College Dublin, Dublin D04 V1W8, Ireland

Daniela Alceste
Department of Surgery
University Hospital Zurich
Rämistrasse 100
CH-8091 Zurich
Switzerland
Daniela.alceste@usz.ch

- + - + - + - + - + - + - + - + - + -

To feed or not: hypothalamic circuits that overcome food cost

J. Nicholas Betley

University of Pennsylvania

- + - + - + - + - + - + - + - + - + -

Long-term exercise training causes changes in Food Preference in Male Sprague Dawley Rats

Lavinia Boccia, J. Nicholas Betley

Institute of Biology, University of Pennsylvania, Philadelphia (USA)

Lavinia Boccia
Institute of Biology
University of Pennsylvania
433 South University Avenue
Philadelphia PA, 19104
USA
laviniab@sas.upenn.edu

- + - + - + - + - + - + - + - + - + - + -

Effects of a chronic intake of the natural sweeteners erythritol and xylitol on vascular function and glucose tolerance in patients with obesity

Valentine Bordier^{1,2}, Fabienne Teyssere^{1,2}, Jürgen Drewe³, Arno Schmidt-Trucksäss⁴, Christoph Beglinger², Bettina K. Wölnerhanssen^{1,2}, Anne Christin Meyer-Gerspach^{1,2}

¹ St. Clara Research Ltd at St. Claraspital, 4002 Basel, Switzerland

² Faculty of Medicine, University of Basel, 4001 Basel, Switzerland

³ Department of Clinical Pharmacology and Toxicology, University Hospital Basel, 4001 Basel, Switzerland

⁴ Department of Sport, Exercise and Health, Faculty of Medicine, University of Basel, 4001 Basel, Switzerland

Valentine Bordier
St. Clara Research Ltd at St. Claraspital
Kleinriehenstrasse 43
CH-4002 Basel
Switzerland
valentine.bordier@unibas.ch

- + - + - + - + - + - + - + - + - + - + -

What is the impact of current breeding practices on the health and wellbeing of the breeding mouse dam?

Christina N. Boyle

Institute of Veterinary Physiology, University of Zurich, Zurich, Switzerland

Christina Neuner Boyle, PhD
Institute of Veterinary Physiology
University of Zurich
Winterthurerstrasse 260
CH-8057 Zurich
Switzerland
boyle@vetphys.uzh.ch

- + - + - + - + - + - + - + - + - + - + -

Neuronal projection mapping with single-cell resolution guided by gene expression data

Bernd Coester, Tune H. Pers

CBMR, SUND, University of Copenhagen

Bernd Coester
Novo Nordisk Foundation Center for Basic Metabolic Research
University of Copenhagen
Blegdamsvej 3B
2200 Copenhagen
Denmark
bernd.coester@sund.ku.dk

- + - + - + - + - + - + - + - + - + - + -

Reduced pancreatic endocrine tissue in weaning rats fed powdered milk diets rich in Maillard reactants

C Erlanson-Albertsson¹, J Dereke¹, E Ekblad¹, B Weström², M Landin-Olsson³ and M Hillman¹

¹ Dept of Experimental Medical Science, Division of Diabetes, Endocrinology and Appetite and

² Dept of Biological Science, Lund University

³ Lund University Hospital

Charlotte Erlanson-Albertsson, Professor
Biomedical Centre, BMC, B11, 221 84 Lund, Sweden
charlotte.ernanson-albertsson@med.lu.se

- + - + - + - + - + - + - + - + - + - + -

The Reward Responses of Oral Erythritol

Emilie Flad^{1,2}, Fabienne Teyssere^{1,2}, Aleksandra Budzinska³, Nathalie Weltens³, Lukas Van Oudenhove³, Christoph Beglinger^{1,2}, Bettina K. Wölnerhanssen^{1,2}, Anne Christin Meyer-Gerspach^{1,2}

¹ St. Clara Research Ltd at St. Claraspital, Basel, Switzerland

² Faculty of Medicine, University of Basel, Basel, Switzerland

³ Laboratory for Brain-Gut Axis Studies, Translational Research Center for Gastrointestinal Disorders, Department of Chronic Diseases and Metabolism, KU Leuven, Leuven, Belgium

- + - + - + - + - + - + - + - + - + - + -

A randomized controlled trial to compare intermittent fasting plus early time-restricted eating versus calorie restriction and standard care in adults at increased risk of type 2 diabetes.

Xiao Tong Teong, Kai Liu, Andrew Vincent, Gary Wittert, Bo Liu, Mark Larance, Amy Hutchison, **Leonie Heilbronn**

Adelaide Medical School, The University of Adelaide, Adelaide, South Australia, Australia.
Lifelong Health Theme, South Australian Health and Medical Research Institute, Adelaide, South Australia, Australia

- + - + - + - + - + - + - + - + - + - + -

A brainstem->hypothalamic GABAergic neurocircuit drives feeding

Pablo B. Martinez de Morentin, Antonio Gonzalez, Yuliia Martynova, Sergiy Sylantyev, **Lora Heisler**

The Rowett Institute, University of Aberdeen, UK

Prof Lora Heisler, FRSE
Chair in Human Nutrition
Deputy Director, Rowett Institute
University of Aberdeen
Aberdeen
AB25 2ZD
UK
lora.heisler@abdn.ac.uk

- + - + - + - + - + - + - + - + - + - + -

Spatial transcriptomics of the human islet

Grant Kolar and Gina Yosten

Saint Louis University School of Medicine, USA

Grant R. Kolar, M.D., Ph.D.
Department of Pathology
Saint Louis University School of Medicine
1402 S. Grand Blvd
Saint Louis, MO 63104
USA
Grant.kolar@health.slu.edu

- + - + - + - + - + - + - + - + - + - + -

A Small Molecule Orexin Agonist Enhances Energy Expenditure and Reduces Adiposity

Catherine M. Kotz^{1,2}, Brianna L. Pomonis^{1,2}, Izabelle D. Benfato³, Laurie L. Shekels², Vijay Mavanji², and Yanan Zhang⁴

¹ Department of Integrative Biology and Physiology, University of Minnesota, Minneapolis, MN, United States

² Veterans Affairs Health Care System Minneapolis, MN, United States

³ Universidade Federal de São Paulo, São Paulo, Brazil

⁴ Research Triangle Institute, North Carolina, United States

Catherine M. Kotz
Minneapolis VA Medical Center
Department of Integrative Biology and Physiology
University of Minnesota
Minneapolis, MN, USA
kotzx004@umn.edu

- + - + - + - + - + - + - + - + - + - + -

Single-cell gene expression dynamics of the mouse hypothalamus induced by an energy imbalance: a complex cell-to-cell interaction

Fanny Langlet

Department of biomedical sciences, University of Lausanne, Switzerland

Fanny Langlet
Department of Biomedical sciences
University of Lausanne
Rue du Bugnon 7
CH-1005 Lausanne
Switzerland
Fanny.langlet@unil.ch

- + - + - + - + - + - + - + - + - + -

Cagrilintide body weight lowering effect relies on RAMPs in male mice

Andrea Leuthard¹, Patricia Kulka¹, Alexandra Oliveira Carvas¹, Sofia Lundh², Kirsten Raun², Thomas A. Lutz¹, **Christelle Le Foll**¹

¹ Institute of Veterinary Physiology, University of Zurich, Switzerland

² Global Drug Discovery, Novo Nordisk A/S, Måløv, Denmark

PD Dr. Christelle Le Foll
Institute of Veterinary Physiology
University of Zurich
Winterthurerstrasse 260
CH-8057 Zurich
Switzerland
christelle.lefoll@uzh.ch

- + - + - + - + - + - + - + - + - + -

Role of the vagal and spinal free fatty acid receptor 3 (FFAR3) in energy balance and glucose homeostasis of lean or diet-induced obese mice

Tyler M Cook¹, Chaitanya K Gavini¹, Jason Jesse¹, Gregory Aubert², Emily Gornick¹, Raiza Bonomo¹, Laurent Gautron³, Brian T Layden⁴, **Virginie Mansuy-Aubert**^{5,6}

¹ Department of Cell and Molecular Physiology, Stritch School of Medicine, Loyola University Chicago, USA

² Department of Cell and Molecular Physiology, Stritch School of Medicine, Loyola University Chicago, USA; Department of Internal Medicine, Division of Cardiology, Stritch School of Medicine, Loyola University Chicago, USA

³ Center for Hypothalamic Research, Department of Internal Medicine, The University of Texas Southwestern Medical Center, Dallas, USA

⁴ Division of Endocrinology, Diabetes and Metabolism, Department of Medicine, University of Illinois at Chicago, USA

⁵ Department of Cell and Molecular Physiology, Stritch School of Medicine, Loyola University Chicago, USA

⁶ Department of Biomedical Sciences, University of Lausanne, Switzerland

- + - + - + - + - + - + - + - + - + -

Unveiling amylin and salmon calcitonin affected brain areas by resting state fMRI

Giulia Mazzini¹, Irmak Gezginer^{2,3}, Christelle Le Foll¹, Diana Kindler³, Daniel Razansky^{2,3}, Thomas Lutz¹

¹ Institute of Veterinary Physiology, Vetsuisse Faculty, University of Zurich, Zurich, Switzerland

² Institute for Biomedical Engineering and Institute of Pharmacology and Toxicology, Faculty of Medicine, University of Zurich, Switzerland

³ Institute for Biomedical Engineering, Department of Information Technology and Electrical Engineering, ETH Zurich, Switzerland

Giulia Mazzini
PhD Student
Institute of Veterinary Physiology
University of Zurich
Winterthurerstrasse 260
CH-8057 Zurich
Switzerland
giulia.mazzini@uzh.ch

- + - + - + - + - + - + - + - + - + -

Fats and sugars recruit distinct gut-brain circuits to control food intake and reward

Molly McDougale¹, Alan Araujo², Mingxin Yang², Arashdeep Singh², Amber Alhadeff^{2,3}, Will de Lartigue^{2,3}

¹ University of Zurich, Switzerland

² Monell Chemical Senses Center, Philadelphia, PA, USA

³ University of Pennsylvania, Philadelphia, PA, USA

Molly McDougale
Institute of Veterinary Physiology
University of Zurich
Winterthurerstrasse 260
CH-8057 Zurich
Switzerland
mjmcdougale@gmail.com

- + - + - + - + - + - + - + - + - + -

A rodent model of adolescent food insecurity: impact on eating behaviors and susceptibility to diet induced obesity

Mai Spaulding, **Emily Noble**

Department of Nutritional Sciences, University of Georgia, Athens GA

- + - + - + - + - + - + - + - + - + -

Astrocyte lipid metabolism: Investigating its influence on the control of energy balance

Keila Navarro i Batista, Christelle Le Foll
Institute of Veterinary Physiology, University of Zurich, Switzerland

Keila Navarro i Batista

Institute of Veterinary Physiology
University of Zurich
Winterthurerstrasse 260
CH-8057 Zurich
Switzerland
keila.navarroibatisata@uzh.ch

- + - + - + - + - + - + - + - + - + -

Intranasal oxytocin as a suppressant of feeding for palatability in rats

Donisha Liyanagamage, Laura McColl, Lisa Glasgow, Allen S. Levine and **Pawel K. Olszewski**

Faculty of Science and Engineering, University of Waikato, Hamilton, New Zealand and
Departments of Food Science and Nutrition and Integrative Biology and Physiology, University
of Minnesota, Minneapolis, MN, US

Pawel K. Olszewski
FSEN University of Waikato
Gate 9 Hillcrest Rd
Hamilton 3240
New Zealand
Pawel.olszewski@waikato.ac.nz

- + - + - + - + - + - + - + - + - + -

Role of ephrinb3 in pomc neurons in the control of energy and glucose homeostasis

Clémentine Pajot, Gwenaël Labouèbe, Yann Emmenegger, Angélique Vaucher, Bernard
Thorens, Sophie Croizier

University of Lausanne, Center for Integrative Genomics, Lausanne, Switzerland

- + - + - + - + - + - + - + - + - + -

ASSESSMENT OF INSULIN SENSITIVITY BY CONTINUOUS GLUCOSE MONITORING AND 24-H URINARY C-PEPTIDE EXCRETION IN NON-DIABETIC INDIVIDUALS

Ravussin E, Sanchez-Delgado G

Pennington Biomedical Research Center, Baton Rouge, LA USA

- + - + - + - + - + - + - + - + - + -

Signals of the overfed state- adipose tissue analysis

Isabelle Scerri¹, Sujoy Ghosh², Michael Stumpe¹, **Yann Ravussin**¹

¹ University of Fribourg, Fribourg, Switzerland

² Duke-NUS Medical School, Singapore

Yann Ravussin, PhD
Université de Fribourg
Dept. Endocrinology
Metabolism and Cardiovascular Systems
Medecine Section

Ch. Du musée 5
Per. 09 Room 1.111
CH-1700 Fribourg
Switzerland
Yann.ravussin@unifr.ch

- + - + - + - + - + - + - + - + - + -

Examining novel therapies for the treatment of severe metabolic disease, diabetes and hyperphagia in lipodystrophy.

Ahlma Roumane, Nadine Sommer, Lora K. Heisler, George D. Mcilroy and **Justin J. Rochford**

Rowett Institute and Aberdeen Cardiovascular and Diabetes Centre, University of Aberdeen, Aberdeen, AB25 2ZD, UK

Prof. Justin Rochford
The Rowett Institute &
Aberdeen Cardiovascular and Diabetes Centre
The University of Aberdeen
Aberdeen
AB25 2ZD
UK
j.rochford@abdn.ac.uk

- + - + - + - + - + - + - + - + - + -

“To brain or not to brain”: evaluating the possible direct effects of the satiety factor oleylethanolamide in the central nervous system

Adele Romano^a, Marzia Friuli^a, Barbara Eramo^a, Cristina Anna Gallelli^a, Justyna Barbara Koczwara^a, Elnaz Karimian Azari^{b,c}, Adrien Paquot^d, Myrtha Arnold^b, Wolfgang Langhans^b, Giulio G. Muccioli^d, Thomas Alexander Lutz^e and Silvana Gaetani^a

^a Department of Physiology and Pharmacology “V. Erspamer”, Sapienza University of Rome, Piazzale Aldo Moro 5, 00185, Rome, Italy

^b Physiology and Behavior Laboratory, ETH Zurich, Schorenstrasse 16, Schwerzenbach 8603, Zurich, Switzerland

^c Metagenics, Aliso Viejo, CA 92656, USA

^d Bioanalysis and Pharmacology of Bioactive Lipids Research Group, Louvain Drug Research Institute, UCLouvain, Université catholique de Louvain, Brussels, Belgium

^e Institute of Veterinary Physiology, Vetsuisse Faculty, University of Zurich, Winterthurerstrasse 260, CH-8057 Zurich

- + - + - + - + - + - + - + - + - + -

Sexually Dimorphic Actions of the Anorexigenic Peptide Nesfatin-1

Rick Samson, Abigayle Schnell, Alicia Pate, and Gina Yosten

Saint Louis University School of Medicine, St. Louis, MO USA

Willis K. “Rick” Samson
Pharmacology and Physiology
Saint Louis University School of Medicine
1402 South Grand

St. Louis, MO 63104 USA
Samsonwk@slu.edu

- + - + - + - + - + - + - + - + - + -

Assessment of microstructure of ingestive behaviour as a predictor of achieved body weight loss one year after Roux-en-Y Gastric Bypass

Michele Serra, Daniela Alceste, Daniel Gero, Jeannette Widmer, Andreas Thalheimer, Robert E. Steinert, Marco Bueter

Department of Surgery, University Hospital Zürich, Zürich, Switzerland

- + - + - + - + - + - + - + - + - + -

Developmental Programming of Neuroendocrine Integration

Richard Simerly, Jessica Biddinger, Dollada Srisai, Michelle Bedenbaugh

Department of Molecular Physiology and Biophysics, Vanderbilt University, Nashville, TN, USA

Richard Simerly, PhD
Louise B. McGavock Professor
Department of Molecular Physiology & Biophysics
Vanderbilt University School of Medicine
2215 Garland Avenue | Nashville, TN 37232-0615
richard.simerly@vanderbilt.edu
Lab website: simerlylab.com

- + - + - + - + - + - + - + - + - + -

Characterization of Eating-Related Anxiety in Anorexia Nervosa

Kimberly R. Smith¹, Sarah Guo¹, Allisyn Pletch¹, Joseph McGuire¹, Jeffrey Brunstrom², Timothy H. Moran¹, Angela Guarda¹

¹ Department of Psychiatry and Behavioral Sciences, Johns Hopkins School of Medicine, Baltimore, MD, USA

² School of Psychological Science, University of Bristol, UK

Kimberly R. Smith
Department of Psychiatry and Behavioral Sciences
Johns Hopkins School of Medicine
600 N Wolfe Street,
Baltimore, MD 21287
USA

- + - + - + - + - + - + - + - + - + -

Sex-specific metabolic and behavioral effects of ketogenic and non-ketogenic high-fat diets in mice

Iliia Smolenskii, Kilian Zajac-Bakri, Dragos Inta

University of Fribourg; University of Basel, Switzerland

Iliia Smolenskii

Translational Psychiatry Lab
Department of Community Health
University of Fribourg
Chemin du Musée 4
CH-1700 Fribourg
Switzerland
ilia.smolenskii@unifr.ch

- + - + - + - + - + - + - + - + - + -

Metabolic effects and safety aspects of acute D-allulose and erythritol in healthy subjects

Fabienne Teyssere^{1,2}, Valentine Bordier^{1,2}, Aleksandra Budzinska³, Nathalie Weltens³, Christoph Beglinger^{1,2}, Lukas Van Oudenhove³, Bettina K. Wölnerhanssen^{1,2}, Anne Christin Meyer-Gerspach^{1,2}

¹ St. Clara Research Ltd at St. Claraspital, Basel, Switzerland

² Faculty of Medicine, University of Basel, Basel, Switzerland

³ Laboratory for Brain-Gut Axis Studies, Translational Research Center for Gastrointestinal Disorders, Department of Chronic Diseases and Metabolism, KU Leuven, Leuven, Belgium

Fabienne Teyssere
St. Clara Research Ltd at St. Claraspital
Kleinriehenstrasse 43
CH-4002 Basel
Switzerland
fabienne.teyssere@unibas.ch

- + - + - + - + - + - + - + - + - + -

Comparative impact of social housing condition, ambient temperature and diet on energy balance and body weight regulation in male C57BL/6J mice

Gertjan van Dijk¹, Giorgio Karapetsas¹, Steffen van Heijningen¹, Dehuang Kong¹, Lidewij Schipper^{1,2}.

¹ GELIFES, Groningen Institute for Evolutionary Life Sciences, University of Groningen, The Netherlands

² Danone Nutricia Research, Utrecht, The Netherlands

- + - + - + - + - + - + - + - + - + -

Novel appetite stimulants to treat anorexia nervosa and anorexia-cachexia

Jasmin Widmer¹, Simon Breitler², Thomas A. Lutz¹, Josua Jordi², Christelle LeFoll¹

¹ Institute of Veterinary Physiology, University of Zurich, Switzerland

² Eracal Therapeutics AG, Schlieren Switzerland

Jasmin Widmer
Institute of Veterinary Physiology
University of Zurich
Winterthurerstrasse 260
CH-8057 Zurich
Switzerland
jasmin.widmer@uzh.ch

- + - + - + - + - + - + - + - + - + - + -

Utilizing the Magel2-deficient rat model to investigate Prader Willi Syndrome-associated hyperphagia

Gina L. C. Yosten, Colleen Bocke, Lisa Hagena, Ammar Mahmood, Willis K. Samson

Department of Pharmacology and Physiology, Saint Louis University School of Medicine, USA

- + - + - + - + - + - + - + - + - + - + -