SUNDAY, MARCH 14
Arrival and Registration

MONDAY, MARCH 15
Welcome and Keynote Session (Joint)
David J. Anderson, California Institute of Technology, USA
Neural Mechanisms of Aggression and Defense and of Their Associated Internal States
Charles S. Zuker, HHMI, Columbia University, USA
Overview of Gut-Brain Axis and Experimental Techniques
Vagal Circuits (Joint)
Speaker to be Announced
Misha Ahrens, Janelia Farms, USA
Imaging of Gut-Brain Circuits in Zebrafish
Jeffrey M. Friedman, Rockefeller University, USA
Molecular Mechanisms Regulating Feeding and Body Weight
Food Appeal: Neural Circuits Encoding Perception and Value (X3)
Mark L. Andermann, Beth Israel Deaconess Medical Center, USA
Estimation of Current and Future Physiological States in Insular Cortex
Dana M. Small, Yale University School of Medicine, USA
Orosensory Monitors of Food Reward
J. Nicholas Betley, University of Pennsylvania, USA
Converging Pain and Hunger Signals
Ryan Remedios†, Helmholtz Zentrum München, Germany
Central Circuits for Cost-Benefit Estimations in Energy Balance Regulation
Short Talks Chosen from Abstracts
Enteronecrine Cells and Gut Hormone Signaling (X4)
Speaker to be Announced
Holly A. Ingraham, University of California, San Francisco, USA
Enterochromaffin Cells: Detection and Transduction of Environmental, Metabolic and Homeostatic Information from the Gut Directly to the Nervous System
Diego V. Bohórquez, Duke University Medical Center, USA
Transduction of a Sense from Gut to Brain
Short Talks Chosen from Abstracts
Poster Session 1

TUESDAY, MARCH 16
Food Intake and Decision-Making: Networks Promoting Food Intake in the Face of Competing Needs (X3)
Paul Glimcher†, New York University, USA
Food Craving and Decision-Making
Giovanni Marsicano, INSERM U 1215, France
Metabolic Control of Brain Functions by Cannabinoid Receptors
Sarah Garfinkel, Brighton and Sussex Medical School, UK
How Interoception Influences Affective State
Yuki Oka, California Institute of Technology, USA
Regulation of Thirst and Sodium Appetite
Short Talks Chosen from Abstracts
Signaling and the Brain (X4)
Scott M. Sternson, HHMI/Janelia Research Campus, USA
Algorhythms for Appetite
Lotte Bjerre Knudsen, Novo Nordisk A/S, Denmark
GLP-1 Signaling in the Brain
Speaker to be Announced
Speaker to be Announced
Short Talks Chosen from Abstracts
Diet-Induced Neuroinflammation and Metabolic Circuitry (X3)
Speaker to be Announced
Stephanie E. Fulton, University of Montreal, Canada
Neuroimmune Correlates of Diet-Induced Mood Deficits
Staci Bilbo, Duke University, USA
Microglial Signaling and Obesity Susceptibility
Christina Garcia Cáceres, Helmholtz Zentrum München GmbH, Germany
Disruption of Astrocyte-Neuron Crosstalk in Obesity
Short Talks Chosen from Abstracts
Poster Session 2

WEDNESDAY, MARCH 17
Neurodevelopmental Programming of Feeding Behavior (X3)
Jens C. Brüning, Max Planck Institute for Metabolism Research, Germany
Maternal Nutrition and Metabolic Outcomes

* Session Chair † Invited but not yet accepted  Program current as of August 31, 2020. Program subject to change. Meal formats are based on meeting venue. For the most up-to-date details, visit https://www.keystonesymposia.org.
**Neuronal Control of Appetite - RESCHEDULING IN PROGRESS (X3)**

*Scientific Organizers: Richard B. Simerly, J. Nicholas Betley and Stephanie E. Fulton*

Supported by the Directors' Fund

**Gut-Brain Axis - RESCHEDULING IN PROGRESS (X4)**

*Scientific Organizers: Ann Weber, Sarkis Mazmanian and Scott M. Sternson*

March 14-17, 2021 • Keystone Resort • Keystone, CO, USA

Supported by the Directors' Fund

---

**Marcelo O. Dietrich**, Yale University, USA

*Ontogeny of Feeding Behavior*

**Linda Rinaman**, Florida State University, USA

*Functional Development of Ingestive Control Circuits*

**Richard B. Simerly**, Vanderbilt University, USA

*Developmental Neurobiology of Hypothalamic Sensory-Motor Integration*

**Short Talks Chosen from Abstracts**

**Microbiome (X4)**

**Speaker to be Announced**

**Rosa Krajmalnik-Brown**, Biodesign Institute at Arizona State University, USA

*Gut Microbiome in Obesity and Autism*

**John Cryan**, University College Cork, Ireland

*Interaction between Brain, Gut and Microbiome in Stress and Immune-Related Disorders*

**Fredrik Bäckhed**, University of Gothenburg, Sweden

*Gut Microbiome and the ENS in Metabolic Disorders*

**Short Talks Chosen from Abstracts**

**Gut-Brain Axis and Disease (X4)**

**Jennifer L. Gommerman**, University of Toronto, Canada

*Influence of Gut Mucosal Immune System on CNS Autoimmune Responses / Role in Multiple Sclerosis*

**Patrik Brundin**, Van Andel Institute, USA

*Role of Gut Inflammation in PD*

**Speaker to be Announced**

**Short Talks Chosen from Abstracts**

**Circadian and Environmental Impacts on Metabolism (X3)**

**Kevin D. Hall**, NIDDK, National Institutes of Health, USA

*Effects of Diet Composition on Metabolism*

**John Stuart O'Neill**, MRC Laboratory of Molecular Biology, UK

*Insulin Signalling Stimulates PERIOD Synthesis to Entrain Circadian Rhythms with Feeding Time*

**David J. Mangelsdorff**, University of Texas Southwestern Medical Center, USA

*FGF21 and Alcohol: Eat and Drink, But Don't Get too Merry*

**Kevin W. Williams**, University of Texas Southwestern Medical Center, USA

*The Effect of Exercise on Synaptic Organization in Feeding Circuits*

**Therapeutic Approaches (X4)**

**Charles Conway**, Washington University in St. Louis, USA

*Vagal Nerve Stimulation in Depression*

**Sarkis K. Mazmanian**, California Institute of Technology, USA

*Microbiome-Based Therapeutics for Autism*

**Ann Weber**, Kallyope, USA

*Treatment of Metabolic Disorders*

**Short Talks Chosen from Abstracts**

**Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (X3)**

**Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (X4)**

**THURSDAY, MARCH 18**

**Departure**

---

* Session Chair † Invited but not yet accepted  Program current as of **August 31, 2020**. Program subject to change. Meal formats are based on meeting venue. For the most up-to-date details, visit [https://www.keystonesymposia.org](https://www.keystonesymposia.org).*