

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

Gut-Brain Axis (X6)

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

Supported by the Directors' Fund

Neuronal Control of Appetite (X5)

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

March 20-23, 2022 • Fairmont Banff Springs • Banff, AB, Canada

Supported by the Directors' Fund

Scholarship Deadline: November 30, 2021 / Abstract Deadline: December 14, 2021 / Discounted Registration Deadline: January 19, 2022

SUNDAY, MARCH 20

Arrival and Registration

MONDAY, MARCH 21

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)

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

Short Talks Chosen from Abstracts

Enteroendocrine Cells and Gut Hormone Signaling (X6)

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, USA
Transduction of a Sense from Gut to Brain

Short Talks Chosen from Abstracts

Food Appeal: Neural Circuits Encoding Perception and Value (X5)

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

Short Talks Chosen from Abstracts

Poster Session 1

TUESDAY, MARCH 22

Mucosal Immune System (X6)

Daniel Mucida, Rockefeller University, USA
Neuro-Immune Communication in the Control of Inflammation in the Gut

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

Aviv Regev, Genentech, USA
Single Cell Sequencing of Intestinal Epithelial Cells Including Tuft Cells and their Response to Infection / ENS

Short Talks Chosen from Abstracts

Food Intake and Decision-Making: Networks Promoting Food Intake in the Face of Competing Needs (X5)

Paul Glimcher[†], New York University, USA
Food Craving and Decision-Making

Giovanni Marsicano, INSERM U1215 Université Bordeaux Segalen, France
Metabolic Control of Brain Functions by Cannabinoid Receptors

Sarah Garfinkel, University College London, 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 (X6)

Scott M. Sternson, HHMI/Janelia Research Campus, USA
Algorithms for Appetite

Lotte Bjerre Knudsen, Novo Nordisk A/S, Denmark
GLP-1 Signaling in the Brain

Linda G. Griffith[†], Massachusetts Institute of Technology, USA
In vitro Gut-Liver-Brain Chip

Short Talks Chosen from Abstracts

Diet-Induced Neuroinflammation and Metabolic Circuitry (X5)

Stephanie E. Fulton, University of Montreal, Canada
Neuroimmune Correlates of Diet-Induced Mood Deficits

Staci Bilbo, Duke University, USA
Microglial Signaling and Obesity Susceptibility

Cristina García Cáceres, Helmholtz Zentrum München GmbH, Germany
Disruption of Astrocyte-Neuron Crosstalk in Obesity

Short Talks Chosen from Abstracts

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Poster Session 2

THURSDAY, MARCH 24

Departure

WEDNESDAY, MARCH 23

Microbiome (X6)

Elaine Y. Hsiao, University of California, Los Angeles, USA
Microbiome Influence on Brain and Behavior

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

Speaker to be Announced

Short Talks Chosen from Abstracts

Neurodevelopmental Programming of Feeding Behavior (X5)

Jens C. Brüning, Max Planck Institute for Metabolism Research, Germany
Maternal Nutrition and Metabolic Outcomes

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

Therapeutic Approaches (X6)

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

Circadian and Environmental Impacts on Metabolism (X5)

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. Mangelsdorf, University of Texas Southwestern Medical Center, USA
FGF21 and Alcohol: Eat and Drink, But Don't Get too Merry

Short Talks Chosen from Abstracts

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Meeting Wrap-Up: Outcomes and Future Directions
(Organizers) (X6)

Meeting Wrap-Up: Outcomes and Future Directions
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