



# Frontiers of Serotonin Beyond the Brain

November 12–15, 2017 | Doubletree by Hilton | Park City, Utah | USA

## Scientific Organizers:

**Fusun Kilic**, University of Arkansas Medical School, USA

**Michael D. Gershon**, Columbia University, USA

**Luc Maroteaux**, UMR-S 839 INSERM / UPMC, France

*Serotonin is a multi-functional signaling molecule that plays extra-cerebral roles, not only in adult life, but in development as well. Although research concerning extra-cerebral serotonin is growing rapidly and interest in the subject is great, the physiological control and underlying molecular processes, as well as the involvement of peripheral serotonin in disease, have not been definitively established. Furthermore, the role of serotonin in peripheral tissues has been neglected and under-represented at current meetings, which have focused on the 3-5% of the body's serotonin that is present in the central nervous system. Therefore, this Keystone Symposia conference aims to reveal insights into the role of serotonin in peripheral tissues, specifically in the diagnosis, prevention and treatment of many diseases, which is long overdue.*

## Session Topics:

- Serotonin, a Major Peripheral Neurohormone
- Serotonin in a Drug Target
- Serotonin in the Circulatory System
- Serotonin Receptors in Cardiovascular and Pulmonary Functions
- Peripheral Serotonin in Relation to Brain Function and Development
- Serotonin in Diseases

**Abstracts can still be submitted for short talk consideration through September 11, 2017  
and for poster presentation through October 1, 2017**

**Discounted Registration Deadline: September 12, 2017**



Note: Scholarships are available for graduate students and postdoctoral fellows and are awarded based on the abstract submitted. Submitting an abstract is an excellent opportunity to gain exposure for your work. Abstracts submitted by the abstract deadline will also be considered for short talks on the program.

Meeting Hashtag: #KSserotonin  
[www.keystonesymposia.org/17T5](http://www.keystonesymposia.org/17T5)

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on Molecular and Cellular Biology  
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Abstract & Scholarship Deadline: July 11, 2017 / Abstract Deadline: August 10, 2017 / Discounted Registration Deadline: September 12, 2017

### SUNDAY, NOVEMBER 12

#### Arrival and Registration

### MONDAY, NOVEMBER 13

#### Welcome and Keynote Address

\***Fusun Kilic**, University of Arkansas Medical School, USA

**Michael D. Gershon**, Columbia University, USA  
*Serotonergic Regulation of Enteric Neurogenesis*

#### Serotonin, a Major Peripheral Neurohormone

\***Fusun Kilic**, University of Arkansas Medical School, USA

**Elaine Y. Hsiao**, University of California, Los Angeles, USA  
*Indigenous Bacteria from the Gut Microbiota Regulate Host Serotonin Biosynthesis*

**Gary M. Mawe**, University of Vermont, USA  
*Mucosal Serotonin Signaling in the Gut: Changes in Disease and Therapeutic Targets*

**Nick J. Spencer**, Flinders University, Australia  
*Is There a Role for Mucosal Serotonin in the Generation of Neurogenic Motor Patterns in the Gut Wall?*

**Supriya Srinivasan**, The Scripps Research Institute, USA  
*Short Talk: Serotonergic Orchestration of Energy Balance: Translating Insights and New Pathways from *Caenorhabditis elegans**

**Natalia Alenina**, Max Delbrück Center for Molecular Medicine, Germany  
*Short Talk: Reevaluation of Serotonin Synthesis Pathways: Phenylalanine Hydroxylase as an Alternative Source of Peripheral Serotonin*

#### Serotonin in a New Drug Target

\***Michael D. Gershon**, Columbia University, USA

**Gerard Karsenty**, Columbia University Medical Center, USA  
*Serotonin in a New Drug Target*

**Suman Wason**, Lexicon Pharmaceuticals, Inc., USA  
*Tryptophan Hydroxylase Inhibitors for Carcinoid Syndrome*

**Michael Bader**, Max Delbrück Center for Molecular Medicine, Germany  
*Peripheral Serotonin, a New Drug Target*

**Mari Lilith Lund**, University of Copenhagen, Denmark  
*Short Talk: Serotonin-Producing Enterochromaffin Cells Are a Major Target for GLP-1 in the Gastrointestinal Tract*

#### Poster Session 1

### TUESDAY, NOVEMBER 14

#### Keynote Address

\***Laurent Monassier**, Université de Strasbourg, France

**Stephanie Wengert Watts**, Michigan State University, USA  
*5-HT and Blood Pressure: Knowing and Learning*

#### Serotonin in the Circulatory System

\***Laurent Monassier**, Université de Strasbourg, France

**Francine Côté**, Institut Imagine INSERM U1163, France  
*Bone Marrow-Derived Serotonin Regulates Expansion of Red Blood Cell Progenitors*

**Harvey J. Kliman**, Yale University, USA

*The Serotonin Highway in the Human Placenta: Serotonin Transport from Mother to Fetus*

**Fusun Kilic**, University of Arkansas Medical School, USA  
*Serotonin Transporter in Platelets and Placenta*

**Yahan Liu**, Peking University Health Science Center, China  
*Short Talk: 5-HT<sub>2B</sub>R Promoted Vascular Restenosis via  $\beta$ -arrestin2-mTOR/p70S6K Pathway*

#### Serotonin Receptors in Cardiovascular and Pulmonary Functions

\***Stephanie Wengert Watts**, Michigan State University, USA

**Laurent Monassier**, Université de Strasbourg, France  
*Heart Disease and Valvulopathy*

**Luc Maroteaux**, UMR-S 839 INSERM / UPMC, France  
*Serotonin Receptor Signaling in Development*

**Kevin Currie**, Cooper Medical School of Rowan University, USA  
*Peripheral Serotonin and Control of the Sympathoadrenal Stress Response*

### WEDNESDAY, NOVEMBER 15

#### Peripheral Serotonin in Relation to Brain Function and Development

\***Luc Maroteaux**, UMR-S 839 INSERM / UPMC, France

**Kara Gross Margolis**, NewYork-Presbyterian Morgan Stanley Children's Hospital, USA  
*The Involvement of Peripheral Serotonin in Autism*

**Randy Blakely**, Florida Atlantic University, USA  
*Keeping the Periphery in Mind: Peripheral Inflammatory Modulation of Behavior Mediated by CNS Serotonin*

**Alexandre Bonnin**, University of Southern California, USA  
*Prenatal Exposures and Placental Serotonin: a Pathway for the Fetal Programming of Mental Disorders*

**Hail Kim**, Korea Advanced Institute of Science and Technology, South Korea  
*Regulation of Systemic Energy Homeostasis by Peripheral Serotonin*

**Jeremy M. Veenstra-VanderWeele**, Columbia University and New York State Psychiatric Institute, USA

*Short Talk: Maternal Whole Blood Serotonin Levels Are Associated with Cognitive Ability and Core Symptoms in Children with Autism Spectrum Disorder*

#### Serotonin in Diseases

\***Michael Bader**, Max Delbrück Center for Molecular Medicine, Germany

**Joanne Wang**, University of Washington, USA  
*Serotonin Transporter Deficiency Drives Estrogen-Dependent Obesity and Glucose Intolerance*

**Robin L. Haynes**, Children's Hospital Boston, USA  
*High Levels of Serum Serotonin in Sudden Infant Death Syndrome*

**Terence Keith Smith**, University of Nevada School of Medicine, USA  
*Does Neuronal Serotonin Have a Role in Colonic Motor Patterns?*

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

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**THURSDAY, NOVEMBER 16**

**Departure**