

Excitatory Synapses & Brain Function

Gordon Research Conference

Integrating Molecules, Synapses, Neurons, Circuits and Behavior

Dates

May 28 - June 2, 2017

Location

Les Diablerets Conference Center
Les Diablerets, Switzerland

Organizers

Chairs:

Kang Shen & Christian Luscher

Vice Chairs:

Pierre Paoletti & Kimberly M. Huber

Application Deadline

Applications for this meeting must be submitted by **April 30, 2017**. Please apply early, as some meetings become oversubscribed (full) before this deadline. If the meeting is oversubscribed, it will be stated here. *Note:* Applications for oversubscribed meetings will only be considered by the Conference Chair if more seats become available due to cancellations.

Meeting Description

The synapse is central to our understanding of circuit function and behavior. In the central nervous system, excitatory synapses represent the primary means of information processing by local circuits and communication between brain regions. Synapses serve as the site of action for many commonly prescribed medications and their disruption contributes to many neurological and psychiatric disorders. These include schizophrenia, autism, depression, substance abuse and addiction, Parkinson's disease, Alzheimer's disease, traumatic brain injury, stroke and epilepsy. In some cases, synaptic dysfunction is causal in disease, whereas in other cases it represents the downstream sequelae of one or more underlying molecular defects. In either case, a fundamental understanding of the formation, structure, molecular organization, signaling function, and plasticity of synapses is essential to progress in lessening the burden of human neurological disease and for predicting and improving mental health.

This conference is unique in its focus on the excitatory synapse, and in its multidisciplinary group of participants including structural biologists, molecular and developmental biologists, cell biologists, biochemists, cell/molecular imagers, biophysicists and neurophysiologists. The conference is intended to relate fundamental insights in excitatory synaptic function to the impairments in synaptic function that occur in disease, as well as the maladaptive plasticity that occurs in substance abuse. The goal of the conference is to identify and highlight fundamental new insights into synaptic function, neural circuit dynamics and dysfunction from a thematic approach. The program has been designed to also highlight cutting edge approaches and to stimulate new concepts, methods and technologies within a sound biological framework of fundamental neuroscience.

Special note: To promote young scientists at the doctoral and postdoctoral level, several slots for oral presentation have been reserved. We also have funds to support travel and registration for these junior scientists. Please clearly indicate in your application if you wish to be considered for an oral presentation and a travel grant. In this case, please add a biosketch of maximally two pages including all your publications and a brief statement why you would like to attend.

Related Meeting



This GRC will be held in conjunction with the "**Excitatory Synapses & Brain Function**" Gordon Research Seminar (GRS). Those interested in attending both meetings must submit an application for the GRS in addition to an application for the GRC. Refer to the [associated GRS program page](#) for more information.

Contributors



Preliminary Program

The topics and speakers for the conference sessions are displayed below (*italics denote discussion leaders*). The Conference Chair is currently developing their detailed program, which will include the complete meeting schedule, as well as the talk titles for all speakers. The detailed program will be available by **January 28, 2017**. Please check back for updates.

- **Keynote Session: From Synapses to Circuits and Behavior**
(*Thomas Sudhof / Silvia Arber / Karl Deisseroth*)
- **Synapses in Autism and Dementia**
(*Kang Shen / Claudia Bagni / Camilla Bellone / Pablo Castillo / Lucas Pozzo-Miller*)
- **Novel Methods**
(*Christian Luscher / Sandeep Robert Datta / Graham Ellis-Davies / Hyungbae Kwon / Ryohei Yasuda*)
- **Synapses in Addiction and Depression**
(*Kimberly Huber / Stephan Lammel / Bo Li / Manuel Mameli / Garret Stuber*)
- **Physiology of Synaptic Transmission**
(*Roger Nicoll / Jeremy Dittman / Pascal Kaeser / Thomas Sudhof / Nathalie Rouach*)
- **Structural Plasticity of Synapses**
(*Richard Huganir / Thomas Blanpied / Anthony Holtmaat / Haruo Kasai / Karen Zito*)
- **Synaptic Receptor Signaling**
(*Camilla Bellone / Daniel Choquet / Susumu Tomita / Suzanne Zukin / Marina Picciotto*)
- **Plasticity of Synaptic Transmission**
(*Pierre Paoletti / Kendal Broadie / Christophe Mulle / Megan Carey / Hailan Hu*)
- **Synapse Formation and Circuit Development**
(*Andres Villu Maricq / Denis Jabaudon / Julia Kaltschmidt / Megan Williams / Jean-Louis Bessereau*)