



Max Planck Junior Scholars Program

Call for Applications Deadline: February 15, 2019

Apply online via www.brain.mpg.de/juniorscholars

The Max Planck Junior Scholars Program offers internships to excellent high-school students to gain research experience at the [Max Planck Institute for Brain Research](http://www.brain.mpg.de) (Frankfurt am Main), the [Max Planck Institute of Biophysics](http://www.mpi-bp.de) (Frankfurt am Main) or the [Max Planck Institute for Heart and Lung Research](http://www.mpi-hlr.de) (Bad Nauheim) and to become enthusiastic for a future career in the natural sciences. Our program includes a **summer internship** in a host laboratory (minimum of three weeks) for students currently enrolled in grade 10 or 11 which can be followed by **weekly visits** to your sponsoring lab (1-2 hours each) during the new school year. During this time you will work together with a **mentor** (either a research assistant, graduate student or a postdoctoral fellow) on a scientific project related to one of the topics described below. You can conclude the program with a **presentation** and a **report**.

Nine Participating Labs

Neural Systems and coding – Gilles Laurent (www.brain.mpg.de/research/laurent-department.html) The Laurent Lab is interested in the behavior, dynamics and emergent properties of networks of interacting neurons or neuron populations, and focuses principally on olfactory and visual systems.

Synaptic Plasticity – Erin Schuman (www.brain.mpg.de/research/schuman-department.html) The Schuman Lab investigates how the cell biological mechanisms at the synapses, points of contact and communication between neurons, transmit information and modify circuits to store information.

Neocortical Circuits – Johannes Letzkus (www.brain.mpg.de/research/letzkus-mpr-group.html) The Letzkus Lab applies several techniques to investigate information processing in sensory areas of neocortex during perception and learning.

Theory of Neural Dynamics – Tatjana Tchumatchenko (www.brain.mpg.de/research/theory-of-neural-dynamics-group.html) The Tchumatchenko Lab focuses on the computational modeling and mathematical analysis of single neurons, neuronal populations and recurrent networks.

Computation in Neural Circuits - Julijana Gjorgjieva (www.brain.mpg.de/research/computation-in-neural-circuits-group.html) The Gjorgjieva Lab uses theoretical and computational approaches to understand how neurons and the connections between them get organized during neural circuit development, and how they change during learning.

Memory and Navigation Circuits - Hiroshi Ito (www.brain.mpg.de/research/memory-and-navigation-circuits-group.html) The Ito Lab investigates neural circuits for spatial navigation behaviors, interested in how animals can choose an optimal route to the goal location.

Neurovascular Interface – Amparo Acker-Palmer (www.brain.mpg.de/research/neurovascular-interface-group.html) The Acker-Palmer Lab aims to elucidating molecular pathways involved in crosstalk between vessels and nerves in order to find out the role of neurons, endothelial cells and astrocytes at the neurovascular interface.

Theoretical Biophysics – Gerhard Hummer (www.biophys.mpg.de/en/theoretical-biophysics.html) The Hummer Lab uses computational methods to explore the structure, dynamics, and function of biomolecules and their complexes.

Developmental Genetics – Didier Stainier (www.mpi-hlr.de/index.php?id=18&L=1) The Stainier Lab investigates questions related to organogenesis including cell differentiation, tissue morphogenesis, organ homeostasis and function, as well as organ regeneration.

Coordinator

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