



The Brain, beyond neurons

Paris, May 11th - 12th 2015

Microglia and synaptic transmission

Cornelius Gross (*Monterotondo*)

Beth Stevens (*Boston*)

Etienne Audinat (*Paris*)

Wenbiao Gan (*New York*)

Yves De Koninck (*Quebec*)

Neuron-glia and glia-glia interactions in myelination and myelin repair

Frank Kirchhoff (*Homburg*)

Eva-Maria Krämer-Albers (*Mainz*)

María Cecilia Angulo (*Paris*)

Vittorio Gallo (*Washington*)

Charles ffrench-Constant (*Edinburgh*)

Catherine Lubetzki (*Paris*)

Pierre Gressens (*Paris*)

Pericytes, microvasculature and blood flow

David Attwell (*London*)

Franck Lebrin (*Paris*)

Elizabeth Hillmann (*New York*)

New roles of astrocytes

Maiken Nedergaard (*New York*)

Serge Charpak (*Paris*)

Cendra Agulhon (*Paris*)

Nathalie Rouach (*Paris*)

Dwight Bergles (*Baltimore*)

Deadline for registration with abstract: April 13th 2015

Deadline for registration without abstract: April 30th 2015

<http://www.biomedicale.parisdescartes.fr/bbn2015/>

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Neurophysiology and New Microscopies Laboratory
INSERM U1128 - University Paris Descartes, Paris, France



PROGRAM

Monday, May 11

8.15 – 9.10: Welcome

9.10 – 9.15: Introduction

SESSION I. Microglia and synaptic transmission (Chair: Alain Bessis)

9.15 – 9.45: **Cornelius Gross** (EMBL Monterotondo, Italy):
Getting rid of unwanted synapses: microglia in synaptic pruning

9.45 – 10.15: **Beth Stevens** (Children's Hospital Boston, USA):
Novel Molecular Breaks that Inhibit Microglia-Mediated Pruning in Health & Disease

10.15 – 10.45: **Etienne Audinat** (INSERM U1128, Univ. Paris Descartes, France):
Microglia and development of cortical synapses

10.45 – 11.00: Young speaker to be selected among submitted abstracts

11.00 – 11.30: Coffee break

11.30 – 12.00 **Wenbiao Gan** (Skirball Institute of Biomolecular Medicine, USA):
Microglial functions in synaptic plasticity

12.00 – 12.30: **Yves De Koninck** (Institut universitaire en santé mentale de Québec, Canada):
Microglia, gate keepers of pain transmission at the spinal level

12.30 – 14.00: Lunch

SESSION II. Neuron-glia and glia-glia interactions in myelination and myelin repair (Chair: Brahim Nait Oumesmar)

14.00 – 14.30: **Frank Kirchhoff** (Molecular Physiology, University of Saarland, Germany):
Interactions of microglia, NG2 glia and oligodendrocytes in vivo

14.30 – 15.00: **Eva-Maria Krämer-Albers** (Johannes Gutenberg Universität, Germany):
Exosomes and their role in mutual neuron-glia communication

15.00 – 15.30: **Maria Cecilia Angulo** (INSERM U1128, Univ. Paris Descartes, France):
Structured synaptic connectivity between GABAergic interneurons and NG2 cells in the developing neocortex

15.30 – 15.45: Young speaker to be selected among submitted abstracts

15.45 – 16.15: Coffee break

16.15 – 16.45: **Vittorio Gallo** (Children's National Medical Center, USA):
Cellular interactions that regulate oligodendrocyte regeneration in the developing and adult brain

16.45 – 17.15: **Charles ffrench-Constant** (Center of Regenerative Medicine, UK):
Intrinsic and extrinsic regulation of myelin sheath formation

17.15 – 17.45: Catherine Lubetzki (ICM, France):

Early events of node of Ranvier formation in the central nervous system

17.45 – 18.15: Pierre Gressens (INSERM U676, Université Paris Diderot, France):

Mechanisms of microglia-mediated blockade of oligodendrocyte maturation in perinatal brain damage

18.00 – 20.00: Cocktail / Poster session

Tuesday, May 12

SESSION III. Pericytes, microvasculature and blood flow (Chair: Serge Charpak)

- 9.00 – 9.30: **David Attwell** (University College London, UK):
The role of pericytes in cerebral vascular disease
- 9.30 – 10.00: **Franck Lebrin** (Collège de France, France):
Pericyte plasticity as a potential drug target to prevent CNS toxicity
- 10.00 – 10.30: **Elizabeth Hillmann** (Columbia University, USA):
The role of endothelial propagation in neurovascular coupling
- 10.30 – 10.45: Young speaker to be selected among submitted abstracts
- 10.45 – 11.15: Coffee break

SESSION IV. New roles of astrocytes (Chair: Etienne Audinat)

- 11.15 – 11.45: **Maiken Nedergaard** (University of Rochester Medical Center, USA):
Emerging role of astrocytes
- 11.45 – 12.15: **Serge Charpak** (INSERM U1128, Univ. Paris Descartes, France):
Timing of astrocytes responses to neuronal activation
- 12.15 – 12.45: **Cendra Agulhon** (FRN, Univ. Paris Descartes, France):
What can we learn from precise control of astrocyte signaling?
- 12.45 – 13.00: Young speaker to be selected among submitted abstracts
- 13.00 – 15.00: Lunch and poster session
- 15.00 – 15.30: **Nathalie Rouach** (College de France, France):
Unraveling the role of astroglial connexins in synaptic strength and memory
- 15.30 – 16.00: **Dwight Bergles** (Johns Hopkins University, USA)
In vivo engagement of astrocyte networks during locomotion
- 16.00 – 16.15: Poster Prizes and Concluding Remarks