

## The Brain Conferences

### The Necessity of Cell Types for Brain Function

7-10 October 2018

[Moltkes Palæ](#), Copenhagen, Denmark

Sunday, 7 October 2018	
14:00-14:20	Arrival and registration
14:20-14:30	Welcome address from the Conference Chairs
14:30-14:35	<a href="#">Andrea Beckel-Michener</a> , National Institutes of Health, USA The Brain Initiative: Overview and Priorities
14:35-15:30	<b>Plenary:</b> <a href="#">Josh Sanes</a> , Harvard University, USA The retinome: Making and using a neural cell atlas
<b>Session 1: Evolutionary perspectives on cortical cell types</b>	
<i>Session Moderator: Ed Lein</i>	
15:30-16:10	<a href="#">Detlev Arendt</a> , EMBL Heidelberg, Germany The invertebrate origins of cortical cell types
16:10-16:30	Coffee break
16:30-17:10	<a href="#">Maria Tosches</a> , Max Planck Institute for Brain Research, Frankfurt, Germany Insights on the evolution of cortical cell types from reptilian single cells
17:10-17:50	<a href="#">Onur Güntürkün</a> , Ruhr-Universität Bochum, Germany Cortex-like systems in a non-cortical animal: The case of birds
17:50-18:30	<a href="#">Suzana Herculano-Houzel</a> , Vanderbilt University, USA The brain cookbook: how many neurons, how many glia, how much vasculature?
18:30-18:45 (4 min/talk + 1 min/Q&A)	<i>Short talk 1:</i> <a href="#">Esther Serrano Saiz</a> , Columbia University, USA BRN3-type POU homeobox genes maintain the identity of mature postmitotic neurons in nematodes and mice <i>Short talk 2:</i> <a href="#">Vanessa Hall</a> , University of Copenhagen, Denmark Uncovering the anatomical and molecular landscape of the developing entorhinal cortex <i>Short talk 3:</i> <a href="#">Huibert Mansvelder</a> , VU University Amsterdam, the Netherlands Prefrontal cortical ChAT-VIP interneurons provide local excitation by cholinergic synaptic transmission and control attention
18:45-19:20	Welcome Drink & Snacks
19:20 –	Get together, networking - Departure to <a href="#">Black Swan bar</a> ( <i>optional</i> ) Free time, Individual dinner

## Monday, 8 October 2018

### Session 2: Molecular classification of cortical neurons

*Session Moderator: Gordon Fishell*

09:00-09:40	<a href="#">Ed Lein</a> , Allen Institute for Brain Science, USA A molecular paradigm for classification and comparative analysis of cortical cell types
09:40-10:20	<a href="#">Andreas Tolias</a> , Baylor College of Medicine, USA The fabric of the brain: a less-artificial intelligence
10:20-10:50	Coffee Break and Group Picture
10:50-11:30	<a href="#">Jens Hjerling-Leffler</a> , Karolinska Institutet, Sweden Brain Cell Type Analysis and Why It Matters for Disease
11:30-12:10	<a href="#">Xiaowei Zhuang</a> , Harvard University, USA In situ single-cell transcriptome imaging and application to the brain
12:10-14:00	Lunch break

### Session 3: Anatomical classification of cortical neurons

*Session Moderator: Giorgio Ascoli*

14:00-14:40	<a href="#">Javier DeFelipe</a> , Cajal Institute, Spain Cortical cell type differences and similarities in different species: human cortical circuit specializations
14:40-15:20	<a href="#">Moritz Helmstaedter</a> , Max Planck Institute for Brain Research, Frankfurt, Germany Cerebral Cortex Connectomics
15:20-15:40	Coffee Break
15:40-16:20	<a href="#">Hongkui Zeng</a> , Allen Institute for Brain Science, USA Cell type classification and circuit mapping in the mouse brain
16:20-17:00	<a href="#">Gabor Tamas</a> , University of Szeged, Hungary Distinctive features of human neocortical microcircuits
17:00-17:15 (4 min/talk + 1 min/Q&A)	<p><i>Short talk 4:</i> <a href="#">Jean Rossier</a>, Université Pierre et Marie Curie, France Parvalbumin interneurons of visual primary sensory cortex in adult mice express Acan and several other genes involved in the making of the PeriNeuronal Net (PNN)</p> <p><i>Short talk 5:</i> <a href="#">Jochen Staiger</a>, University of Goettingen, Germany Diversity of VIP neurons: insights into electrophysiological types and the influence of neuromodulation</p> <p><i>Short talk 6:</i> <a href="#">Nadia Aalling</a>, University of Copenhagen, Denmark Transcriptional hallmarks of non-neuronal phenotypes of the adult mouse brain</p>
17:15-19:30	Poster Session I & Afternoon Snack
20:00-22:00	Arranged Dinner at <a href="#">Madklubben Bistro de Luxe</a>

**Tuesday, 9 October 2018**

**Session 4: Functional classification of cortical neurons**

*Session Moderator: Peter Somogyi*

09:00-09:40	<a href="#">Gordon Fishell</a> , NYU School of Medicine, USA Genetic and epigenetic characterization of developing cortical interneurons
09:40-10:20	<a href="#">Josh Huang</a> , Cold Spring Harbor Laboratory, USA Exploring the biological basis of neuronal identity and granularity: from transcriptional mechanism to motor control
10:20-10:30 (4 min/talk + 1 min/Q&A)	<i>Short talk 7:</i> <a href="#">Dirk Feldmeyer</a> , Research Centre Juelich, Germany Interneuron subtypes in barrel cortex layer  <i>Short talk 8:</i> <a href="#">Christiaan de Kock</a> , VU University Amsterdam, the Netherlands Synaptic communication between identified pyramidal neurons in adult human temporal neocortex
10:30-10:50	Coffee Break
10:50-11:30	<a href="#">Hannah Monyer</a> , Heidelberg University, Germany Short- and long-range projecting GABAergic neurons
11:30-12:10	<a href="#">Maiken Nedergaard</a> , University of Rochester Medical Center/University of Copenhagen, USA/Denmark The nightlife of astrocytes
12:10-12:25 (4 min/talk + 1 min/Q&A)	<i>Short talk 9:</i> <a href="#">Hajime Hirase</a> , Center for Brain Science, RIKEN, Japan Adrenergic receptor antagonism provides neuroprotection and facilitates recovery from cortical spreading depression/depolarization  <i>Short talk 10:</i> <a href="#">Jan Lui</a> , Stanford University, USA Molecular, anatomical, and behavioral dissection of mPFC projection neuron heterogeneity  <i>Short talk 11:</i> <a href="#">Ulrich Pfisterer</a> , University of Copenhagen, Denmark Dysregulation of genes and gene modules in epilepsy: snRNA-seq of inhibitory and excitatory neurons in human tissue
12:25-13:30	Lunch break
13:30-15:30	Poster Session II & Afternoon Snack
15:30-17:45	Guided city tour walk
17:45-	Free time, individual dinner

**Wednesday, 10 October 2018**

**Session 5: Computational models of cortical neurons**

*Session Moderator: Rafael Yuste*

09:00-09:40	<a href="#">Richard Scheuermann</a> , J. Craig Venter Institute, USA Semantically-Coherent and Statistically-Comparable Representation of Brain Cell Types
09:40-10:20	<a href="#">Sebastian Seung</a> , Princeton Neuroscience Institute, USA Functional connectomics of visual cortex
10:20-10:40	Coffee Break
10:40-11:20	<a href="#">Michael Hawrylycz</a> , Allen Institute for Brain Science, USA Toward a Consensus Taxonomy of Cell Types in the Brain
11:20-12:00	<a href="#">Pedro Larrañaga</a> , Technical University of Madrid, Spain Bayesian Networks for Cell Type Understanding
12:00-13:00	Lunch break

**Session 6: Multimodal classification of cortical neurons**

*Session Moderator: Michael Hawrylycz*

13:00-13:40	<a href="#">Rafael Yuste</a> , Columbia University in the City of New York, USA Petilla 2.0: Towards a community-led classification of cortical neurons
13:40-14:20	<a href="#">Giorgio Ascoli</a> , George Mason University, USA Axonal projections and neuronal classification
14:20-14:40	Coffee Break
14:40-15:20	<a href="#">Peter Somogyi</a> , University of Oxford, UK Brain Space and Time define Neuron Types
15:20-17:20	Group Discussion: <a href="#">New synthesis on cortical cell types nomenclature and classification</a>
19:00-19:15	Farewell drink
19:15-22:00	Gala Dinner and Poster Awards