



Programme of the ERM 2017 - www.erm2017.eu

Thursday 5th October

8h – 9h	Registration
9h-9h05	Introduction by Serge Picaud
	The Human and Primate Retina – Session
	Chair : <u>John Dowling</u>
9h05 – 9h25	John Dowling (Molecular and Cellular Biology Harvard University, Cambridge, MA) Reconstructing the Human Fovea
9h25 – 9h45	Raunak Sinha (Physiology and Biophysics, University of Washington School of Medicine, USA) Transformation of visual signals in the fovea
9h45 – 10h05	Szabó Arnold (Semmelweis University, Department of Human Morphology and Developmental Biology, Budapest, Hungary) Long-term organotypic culture model of the adult human retina
10h05 – 10h15	Alexandra Tikidji-Hamburyan (Stanford University, CA, USA) Sampling of cone inputs by major ganglion cell types in primate retina
	Retinal Diseases and Therapies – Session I
	Chair : <u>Homaira Nawabi</u>
10h15 – 10h35	Florian Sennlaub (Institut de la Vision, Paris, F) Genetic AMD-risk factors promote pathogenic subretinal inflammation
10h35 – 10h55	Przemyslaw Sapieha (University of Montreal, Montréal, Canada) Cellular Senescence and Dormancy in Retinopathy
10h55 – 11h25	Coffee Break - Hanging of the Session I Posters
11h25 – 11h45	Marius Ader (Technische Universität, Center for Regenerative Therapies Dresden, Germany)

Photoreceptor transplantation: Marker-free identification of photoreceptors by mechanical phenotyping

11h45 – 12h05 **Homaira Nawabi** (Neuroscience Institute, Grenoble, France)
Axon Regeneration in the visual system

12h05 – 12h25 **Andrew Huberman** (Neurobiology & Ophthalmology, Stanford School of Medicine, Stanford, CA, USA)
Visual system regeneration. Breaking and re-creating brain circuits for seeing

12h25 – 12h45 **Short Presentations of 7 of our sponsors* (about 3 minutes each)**

12h45 – 14h30 **Lunch Break and Poster Session I : Retinal Diseases and Therapies**

Retinal Diseases and Therapies – Session II

Chair: Nicolas Cuenca

14h30 – 14h50 **Fabio Benfenati** (Centre for Synaptic Neuroscience and Technology, Istituto Italiano di Tecnologia, Genova, IT)
A fully organic retinal prosthesis restores vision in a rat model of degenerative blindness

14h50 – 15h10 **Deniz Dalkara** (Institut de la Vision, Paris, France)
Optogenetics for vision restoration- translation from mice to primates

15h00 – 15h10 **Alexander Kolesnikov** (Washington University School of Medicine in St. Louis, USA)
Rhodopsin expression increases the resistance of mammalian M-cones to retinoid deficiency in LCA model

15h10 – 15h20 **Paola Vagni** (LNE, École polytechnique fédérale de Lausanne, CH)
Preventing visual function loss in the rd10 mouse model of retinitis pigmentosa using gene editing

15h20 – 15h40 **Nicolás Cuenca** (Departamento de Fisiología, Genética y Microbiología Universidad de Alicante, SP)
Impairment of dopaminergic circuitries, ganglion cells loss and Lewy bodies containing p-alpha synuclein were found in human retinas in Parkinson`s disease

15h40 – 16h10 **8 Quickfire presentations** (3 min to introduce your own poster)

1) Luba Astakhova

Two convenient experimental models of photoreceptor degeneration for screening of molecular photoswitches

2) Juliette Varin

Development of a gene therapy approach for cCSNB when mutations in GRM6 and LRIT3 are involved

3) Elisa Castaldi

Visual BOLD response in late-blind subjects with Argus II retinal prosthesis

4) Mirella Telles Salgueiro Barboni

ON/OFF asymmetrical dysfunction of retinal mechanisms in Duchenne muscular dystrophy patients

5) Ulisse Bocchero

Early steps of photoreceptor degeneration in a model of retinitis pigmentosa

6) Martina Biagioni

Unexpected prevalence of inflammatory response in a mouse model of Retinitis Pigmentosa: looking toward therapeutic potential

7) Samuel Mills

The contribution of microglia to early vascular dysfunction in diabetic retinopathy

8) Matt Rutar

Dynamic interplay of innate and adaptive immunity during sterile retinal inflammation: Insights from the transcriptome

16h10 – 17h45

Coffee Break and Poster Session II : Retinal Diseases and Therapies

19:30

Gala cocktail buffet at the Hotel de Ville

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Friday 6th October

Retinal Impact on Eye Development and Myopia - Session

Chair : Mabelle Pardue

- 9h– 9h20 **David Copenhagen** (UCSF School of Medicine, Ophthalmology, San Francisco CA, USA)
Melanopsin-based photoreception in fetal and newborn mice: Actions on behavior and both vascular and neural development in the eye
- 9h20 – 9h40 **Frank Schaeffel** (Neurobiology of the Eye, University of Tübingen, Germany)
Retinal control of myopia - lenses, light and atropine
- 9h40 – 10h00 **Mabelle Pardue** (Biomedical Engineering, Emory University, Atlanta, GA, USA)
Contributions of the three photoreceptor pathways to refractive eye growth and myopia in mice

10h00 – 10h30 Coffee Break – Hanging of the Session III Posters

Retinal Circuits – Session I

Chair : Katrin Franke

- 10h30 – 10h50 **Leon Lagnado** (School of Life Sciences, University of Sussex, Brighton, UK)
How do ribbon synapses encode visual information?
- 10h50 – 11h10 **Greg Schwartz** (Northwestern University Feinberg School of Medicine, Chicago, USA)
A self regulating gap junction network of amacrine cells releases nitric oxide in the retina.
- 11h10 – 11h30 **Daniel Kerschensteiner** (Neuroscience, and Biomedical Engineering, Washington University School of Medicine, USA)
Dissecting motion processing circuits in the retina
- 11h30 – 11h50 **Katrin Franke** (Ophthalmic Research, University of Tübingen, Germany)
Functional diversity in the mouse inner retina
- 11h50 – 12h00 **Jeffrey Diamond** (National Institute of Neurological Disorders and Stroke U.S. National Institutes of Health, USA)
Synaptic transfer between ON and OFF visual channels mediated by All amacrine cells in the mouse retina
- 12h00 – 12h10 **Lena Nemitz** (University of Oldenburg, Germany)
Development of the photoreceptor ribbon synapse in the absence of horizontal cells
- 12h10 – 12h20 **Lea Ankri** (Weizmann Institute of Science, Rehovot, Israel)
Complexity and dynamics of inhibitory circuits shape the directional code of the retina

12h20 – 14h20

Lunch Break and Poster Session III : Retinal Circuits

Retinal Circuits – Session II

Chair: Mrinalini Hoon

14h20 – 15h00

10 Quickfire presentations (3 min to introduce your own poster)

1) Morven A Cameron

Photoreceptor inputs for light-induced dopamine release in the mouse retina

2) Maria M. Arietti

Circadian control of cone kinetics

3) Gloria Colombo

Quantitative analysis of microglial morphology and cell type interaction during retinal postnatal development

4) Benjamin Sivyer

Specific inhibitory pathways mediate saccadic suppression in direction-selective ganglion cells

5) Mohammad Khani

Linear and nonlinear integration of chromatic stimuli in retinal circuitry

6) Yanli Ran

Spatial Integration in Mouse Retinal Ganglion Cell Dendrites

7) Rebekah Warwick

Response properties of retinal ganglion cells and their underlying circuits vary with retinal location

8) Gerrit Hilgen

Functional characterisation of parvalbumin-expressing cells in the mouse retina

9) Norma Kühn

Synergistic decoding of complex texture motion from populations of direction-selective ganglion cells

10) Yang Yue

Encoding natural images by gap junctions in retinal rod photoreceptors through a large-scale network model

15h00 – 15h10

Mrinalini Hoon (Dept of Biological Structure University of Washington, USA)

Role of the GABA_A $\alpha 3$ receptor as a developmental organizer of retinal inhibitory synapses

15h10 – 15h20

David Krizaj (Moran Eye Institute, University of Utah School of Medicine, USA)

Endocannabinoids modulate RGC physiology through parallel modulation of TRPV1 and cannabinoid receptors

15h20 – 15h30

Tom Baden (School of Life Sciences, University of Sussex, UK)

Zebrafish colour vision: Anisotropic retinal circuits match asymmetric spectral content in natural light

15h30 – 15h40

Nina Milosavljevic (Medicine and Health The University of Manchester, UK)

Probing the intraretinal influences of ipRGCs using chemogenetic manipulation

15h40 – 15h50

Stephen C. Massey (University of Texas at Houston, USA)

Rod/Cone Coupling in the Mouse Retina

15h50 – 16h00 **Giulia Spampinato** (Institut de la Vision , Paris, F)
Probing the retinal circuit by combining two photon holographic stimulation and multi electrode recordings

16h00 – 17h45 **Coffee Break and Poster Session IV : Retinal Circuits**

Saturday 7th October

Tools against retinal diseases – Session

Chair: Botond Roska

9h– 9h20 **Botond Roska** (Friedrich Miescher Institute for Biomedical research, Basel,CH)
Tools for studying retinal circuits and disease

9h20 – 9h40 **Joana Neves** (The Buck Institute for Research on Aging, Novato, CA, USA)
MANF as an immune modulatory intervention to improve retinal regenerative therapies in aging

Light Adaptation - Session

Chair : Petri Ala-Laurila

9h40 – 10h00 **Thomas Münch** (Werner Reichardt Centre for Integrative Neuroscience, Tübingen, Germany)
Adaptation of retinal processing in a dynamically changing environment

10h00 – 10h20 **Greg Field** (Neurobiology, Duke University School of Medicine, USA)
Light Adaptation and Correlated Activity in the Rodent Retina.

10h20 – 10h40 **Petri Ala-Laurila** (Department of Biosciences, University of Helsinki, Finland)
Is mouse vision more sensitive during the night ?

10h40 – 12h30 **Coffee Break + Poster Session V : Human Primate Retina + Myopia + Light Adaption + others**

12h30 – 13h00 Conclusions and presentation of the next meetings (2019 – 2021), winners of the young reserchers awards, by Serge Picaud, Petri Ala-Laurili, Andrew Huberman

Jeudi 5 Octobre – Symposium en français

Innovations et Solutions thérapeutiques

Robert Duvoisin (Oregon Health & Science University, Portland U.S.A.)

- 14h00 – 14h30 Les prothèses rétiniennes de nouvelle génération + discussion
Paul-Henri Prevot (Institut de la Vision, Paris) **Yannick Lemer** (Fondation Ophthalmologique A. de Rothschild, Paris)
- 14h30 – 15h00 Restauration visuelle par thérapie Optogénétique + discussion
Antoine Chaffiol (Institut de la Vision, Paris)
- 15h00 – 15h30 Production de rétines in vitro à partir de cellules pluripotentes humaines : Un nouvel outil thérapeutique + discussion
Sacha Reichman (Institut de la Vision, Paris)
- 15h30 – 16h00 Approches ciblant le remplacement de l'EPR et les essais cliniques en cours + discussion
Karim Ben M Barek (Institut de la Vision, Paris)
- 16h00 – 16h20 Pause-Café
- 16h20 – 16h50 Imagerie et nouveaux critères d'évaluations médicaux + discussion
Michel Paques / Kate Grieve (Institut de la Vision et CHNO des 15-20, Paris)
- 16h50 – 17h10 Dystrophie rétinienne : La survie des cônes et le RdCVF + discussion
Emmanuelle Clérin (Institut de la Vision, Paris)
- 17h10 – 17h30 Impact des troubles visuels sur la vie journalière des patients atteints de dystrophies rétiniennes + discussion
Saddek Mohand-Saïd (Institut de la Vision et CHNO des 15-20, Paris)