



## 12th Optic Nerve Meeting

### Oberurgl, Austria, 10-12 December 2024

20 minute slot = 10 minute talk and 10 minute discussion  
10 minute slot = 5 minute talk and 5 minute discussion

#### Tuesday 10<sup>th</sup> December

8:30 - 8:40	Jonathan, Keith & Franz	<i>Welcome and Introduction</i>
<b>Session 1: Glia</b>		
<b>Chairs: Keith Martin, Franz Grus</b>		
8:40 - 9:00	Tom Reh	Müller glia can be reprogrammed to make retinal ganglion cells; now what?
9:00 - 9:20	Michel Cayouette	Retinal glia regulate the development and function of ipRGCs
9:20 - 9:40	Tatjana Jakob	Alpha retinal ganglion cell to microglia signaling in glaucoma
9:40 - 10:00	Thora Karadottir	Oligodendrocytes and ageing

#### Morning Tea

#### Session 2: Autophagy and mitochondria

**Chairs: Christian Behl, Pete Williams**

10:30 - 10:50	Hagen Körschgen	Unraveling BAG3-mediated autophagy - implications for neurodegeneration
10:50 - 11:10	Marcella Votruba	NAM as a neuroprotective therapeutic intervention for mitochondrial optic neuropathies
11:10 - 11:30	Elena Vecino	Implications of mitochondria in the neuroprotection and neuroregeneration of RGCs
11:30 - 11:50	Katharina Bell	Effect of age on the senescence transcriptome in mouse and human retina
11:50 - 12:00	Xandra Pereira	TRPV4 modulation in Müller glia: Impact on gliosis and retinal cell survival

#### Lunch Break

#### Session 3: Transient IOP fluctuations - do they matter?

**Chairs: Crawford Downs, Claire Mitchell**

17:30 - 17:50	Crawford Downs	Intraocular and cerebrospinal pressure fluctuations: Biomechanical effects on the optic nerve head
17:50 - 18:10	Dorota Skoronska-Krawczyk	Effects of transient IOP fluctuations on the retina - apoptosis, senescence and epigenetic responses
18:10 - 18:30	David Krizaj	Mechanotransduction, calcium and RGC synapses
18:30 - 18:50	Claire Mitchell	Mechanotransduction in the retina
18:50 - 19:00	Luca Masin	Local glycolysis as a gatekeeper of injury-induced axonal regrowth

#### Wednesday 11<sup>th</sup> December

#### Session 4: Regeneration

**Chairs: Britta Eickholt, Richard Eva**

8:30 - 8:50	Oren Schuldiner	Axon degeneration and regeneration during developmental neuronal remodelling
8:50 - 9:10	Alexandra Byrne	Neural repair following injury or disease
9:10 - 9:30	Lukas Neukomm	A novel model to study low NAD <sup>+</sup> -induced neurodegeneration in <i>Drosophila</i>
9:30 - 9:50	Evan Reid	A novel function for protrudin in endosomal tubule fission and endosome-to-Golgi traffic
9:50 - 10:00	Jean-Marc Matter	Foveal RGC characteristics in fast flying birds hunting on the wing

#### Group Photo + Morning Tea

#### Session 5: Biomarkers and clinical translation

**Chairs: Wendy Liu, Bob Casson**

10:30 - 10:50	Leo Schmetterer	Predicting glaucoma progression to improve clinical trials in glaucoma
10:50 - 11:10	Bob Casson	Photobiomodulation in experimental glaucoma
11:10 - 11:30	Wendy Liu	Mechanosensation - beyond IOP
11:30 - 11:50	Joana Galvao	The power of partnership: Aligning academic research and industry practices to bring innovation to glaucoma patients
11:50 - 12:00	Linglin Zhang	Targeting NLRP3/caspase-1 reduces pyroptosis and astrogliosis; Protecting the retina from hypoxia

#### Lunch Break

#### Session 6: RGC metabolism and injury

**Chairs: Lukas Neukomm, Marcella Votruba**

17:30 - 17:50	Tudor Badia	A novel glucose transporter regulator expressed in RGC subpopulations
17:50 - 18:10	Shweta Singhal	Understanding the cellular mechanisms underlying Ethambutol Optic Neuropathy using stem cell derived RGCs
18:10 - 18:30	Andrea Loreto	NAD: the good the bad and the ugly
18:30 - 18:50	Wenting You	In vitro studies to explore the potential of rescuing dying RGCs
18:50 - 19:10	Britta Eickholt	Astrocyte reactivity and neuroinflammation: The role of LRRK2 and Rab8 in injury pathways

#### Thursday 12<sup>th</sup> December

#### Session 7: Transplantation and regeneration

**Chairs: Thora Karadottir, Jeff Goldberg**

8:30 - 8:50	Jeff Goldberg	RGC transplant and anatomic and functional integration
8:50 - 9:10	Volker Patzel	Functional synaptic integration of transplanted retinal ganglion cells
9:10 - 9:30	Luciano Custo-Grieg	Developmental in vivo screen delineates transcriptional controls and gene regulatory networks capable of directing RGC differentiation
9:30 - 9:50	Larry Benovitz	The mouse model of optic nerve regeneration: novel effectors
9:50 - 10:00	Bart Nieuwenhuis	Endoplasmic reticulum as target for optic nerve regeneration

#### Morning Tea

#### Session 8: Gene therapy and novel therapeutic approaches

**Chairs: Tom Johnson, Katharina Bell**

10:30 - 10:50	András Komáromy	Canine primary open-angle glaucoma – updates on an established model
10:50 - 11:10	Volker Patzel	Non-viral vectors for mitochondrial gene therapy - a potential approach for optic nerve disease
11:10 - 11:30	Nick Marsh-Armstrong	Myeloid cell ablation phenocopies the axon preservation due to NAD <sup>+</sup> augmentation
11:30 - 11:50	Pete Williams	Gene therapy and pharmacological targeting of NMNAT2 in glaucoma
11:50 - 12:00	Andrew White	Axonal mitochondria preservation by angiotensin receptor blockers in a rodent optic nerve crush model

#### Lunch Break

#### Session 9: In vivo imaging and organoids

**Chairs: Jonathan Crowston, Anna Wang**

17:30 - 17:50	Luis Alarcon-Martinez	Alterations of the flux pattern in glaucoma: mismatch between supply and demand
17:50 - 18:10	Anna Wang	Functional imaging of the optic nerve with 2-photon microscopy in living mice
18:10 - 18:30	Erik Ullian	Investigating neurodegeneration in the brain and retina using assembled iPSC organoid models and CRISPRi
18:30 - 18:50	Robert Zawadzki	Progress on in vivo retinal and ONH imaging in animal models