

# Retina in a dish: Methods & applications in life sciences

FEBS Advanced Lecture Course

8–12 June 2026 | Kuopio, Finland

APPLICATION  
DEADLINE  
31 March 2026

ABSTRACT  
SUBMISSION BY  
30 April 2026

[retinaexvivo2026.febsevents.org](https://retinaexvivo2026.febsevents.org)

## KEYNOTE SPEAKERS

**Krzysztof Palczewski**  
Chair of Ophthalmology,  
Distinguished  
Professor  
University of  
California-Irvine, USA



**Marius Ueffing**  
Director of the Institute for  
Ophthalmic Research, Professor  
University of Tübingen,  
Germany



**Arto Urtti**  
Professor of  
Biopharmaceutics  
University of  
Eastern Finland



## SPEAKERS

**Henri Leinonen**  
Research Director, Adj. Prof.  
University of Eastern Finland  
Finland

**Blanca Arango-Gonzalez**  
Senior Staff Scientist  
University of Tübingen  
Germany

**Petri Ala-Laurila**  
Professor of Neurobiology  
University of Helsinki  
Finland

**François Paquet-Durand**  
Prof. Dr. rer. nat.  
University of Tübingen  
Germany

**Alexa Klettner**  
Professor, ophthalmology  
University of Kiel, Germany

**María Miranda**  
Professor, Faculty Dean  
Cardenal Herrera-CEU University  
Spain

**Frans Vinberg**  
Associate Professor  
University of California-Irvine, USA

**Raunak Sinha**  
Associate Professor  
University of Wisconsin-Madison, USA

**Yuanyuan Chen**  
Assistant Professor  
University of Pittsburgh, USA

**Ana Almansa García**  
Senior PhD student, University of  
Tübingen, Germany

**Elena Vecino**  
Professor of Cell Biology  
University of Basque Country  
Spain

**Marco Bassetto**  
Postdoctoral scholar  
University of California-Irvine  
USA

**Antolin Canto**  
Postdoctoral researcher  
Cardenal Herrera-CEU University  
Spain

**Xandra Pereira**  
Postdoctoral researcher  
University of Basque Country  
Spain

**Catherine Hottin**  
Postdoctoral researcher  
University of Tübingen, Germany

**Giedrius Kalesnykas**  
CEO and Founder of  
Experimentica Ltd,  
Finland

**Jukka Puoliväli**  
Managing Director  
Experimentica  
Ltd., Finland

**Teemu Turunen**  
CSO and founder of  
Maculaser Ltd.,  
Finland

## ORGANIZERS

**Henri Leinonen**  
Main organizer  
**Blanca Arango-Gonzalez**  
Co-organizer  
**Petri Ala-Laurila**  
Co-organizer

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**FEBS PRESS**  
science publishing by scientists

FEBS Advanced Courses are supported by the FEBS Press journals: *The FEBS Journal*, *FEBS Letters*, *Molecular Oncology* and *FEBS Open Bio*.

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leading the wave

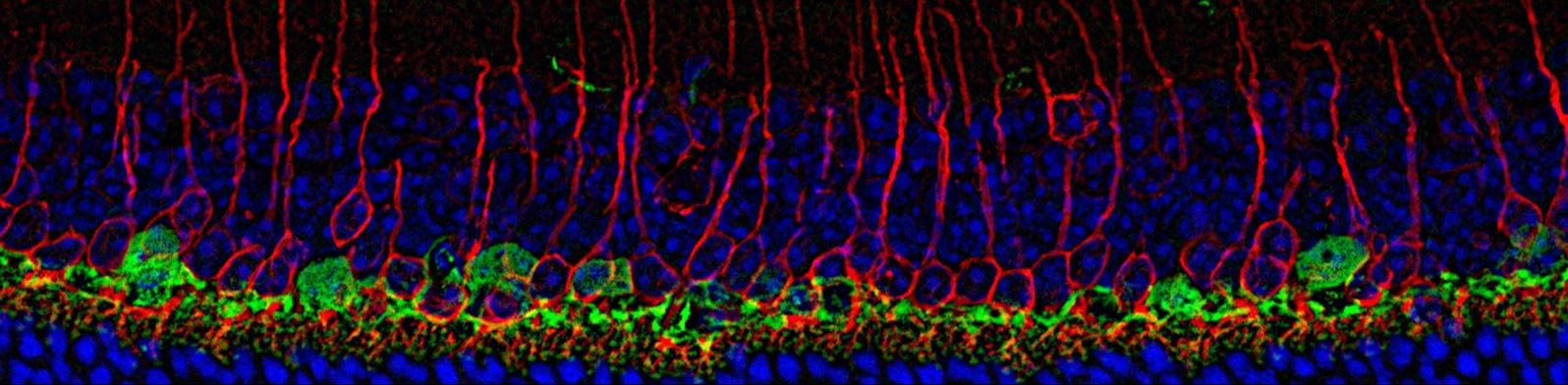
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**SYSY**  
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 **FEBS 2026**  
ADVANCED COURSE



# Day 1: Organotypic Retina Cultures – Foundations & Setup

## **Morning Session: Basics & Methodology**

- 9-9.15: Welcome and event organization: Henri Leinonen

## **Lecture session 1: Introduction to Organotypic Retina Cultures**

- 9.15-10.00: History, basics, and key applications 1/2: **Blanca Arango-Gonzalez**
- 10.00-10.45: History, basics, and key applications 2/2: **Blanca Arango-Gonzalez**
- 10:45-10:50: Short break
- 10:50-11:35: Development of serum free organotypic retinal explant cultures: A historical overview: **François Paquet-Durand**

## **LUNCH BREAK 11.35-12.30**

## **Lecture session 2: Experimental Setup & Best Practices**

- 12.30-13.15: Dissection, media composition, and maintaining tissue viability in rodent: **Catherine Hottin**
- 13.15-14:00: Primate and porcine ex vivo retinas: **Ana Almansa García, Frans Vinberg**

## **Afternoon Session: Keynote and flash talks**

- 14.05-15.00: **Keynote lecture 1: Ocular drug delivery**
- 15:00-15.30 Selected abstract flash talks (1-10)

## **COFFEE BREAK 15.30-16:00**

## **Evening Session: Scientific Publishing in Retinal Research**

- 16:00-16:30 FEBS Press Representative (**Daniela Ruffell**, PhD)

## **Lecture session 3: Writing & Publishing High-Impact Research**

- 16.30-17.30 Choosing the right journal, structuring a manuscript, and responding to reviewers: **Raunak Sinha, Henri Leinonen (other PIs)**

## **Workshop 1: Manuscript Abstract & Figure Preparation**

- 17.30 →: Participants can receive feedback on pre-submitted materials

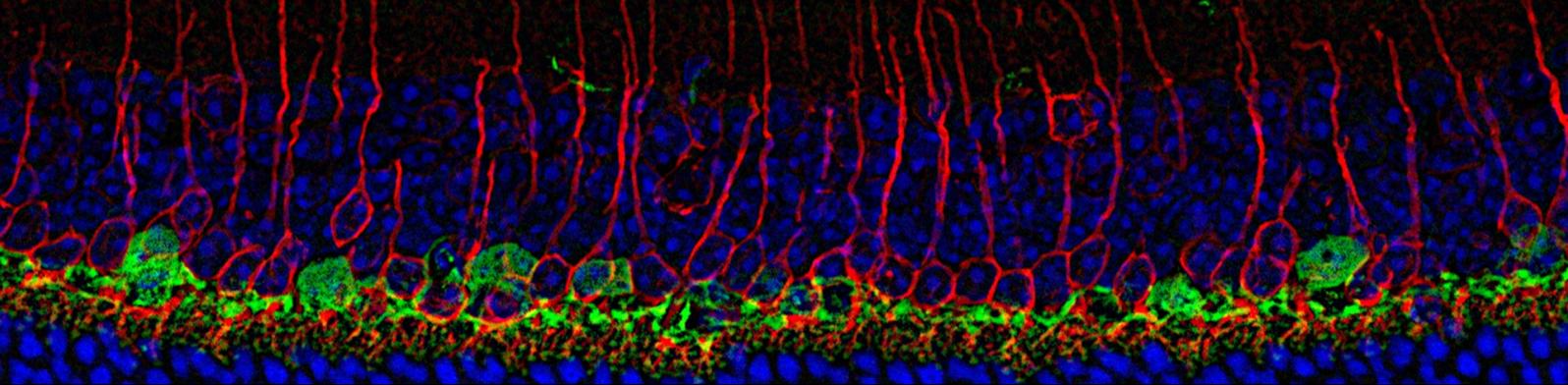
## **18.00- POSTER SESSION 1 & GET-TOGETHER & EVENING SOCIAL**

Keynote speaker



**Arto Urtti**

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# Day 2: Applications in Disease Modeling & Drug Testing

## **Lecture session 4: Disease models, Organotypic Cultures and Therapeutic aspects**

- 9.00-9.45: Inherited retinal degenerations: **Francois Paquet-Durant**
- 9.45-10.30: Age-related macular degeneration: **Alexa Klettner**
- 10.30-10.40 short break
- 10.40-11.25: Diabetic retinopathy and oxidative stress: **Maria Miranda**
- 11.25-12.10: Glaucoma: **Elena Vecino**

## **LUNCH BREAK 12.10-13.00**

- 13:00-13:45 Special lecture: Adult Müller glia cultures: **Xandra Pereiro**
- 13.45-14. 15: Selected abstract flash talks (11-20)

## **Afternoon Session: Tutorial session 1**

- 14.15-15.45: Demo/tutorial Session: Virtual set up of explants. Discussion of all things that go wrong, points of extra care, common pitfalls and troubleshooting. Coordinators: **Xandra Pereiro, Antolin Canto, Catherine Hottin, Ana Almansa Garcia**

## **COFFEE BREAK 15.45-16.15**

## **Evening Session: Grant Writing & Funding Strategies**

### **Lecture session 5: Writing Competitive Grant Applications**

- 16.15-17.00: Structuring proposals for funding agencies (e.g., ERC, NIH, Marie Curie): **Petri Ala-Laurila, Frans Vinberg (other Pis)**
- **Workshop 2: Developing a Winning Grant Proposal**
- 17.00- Participants can get feedback on presubmitted research proposals

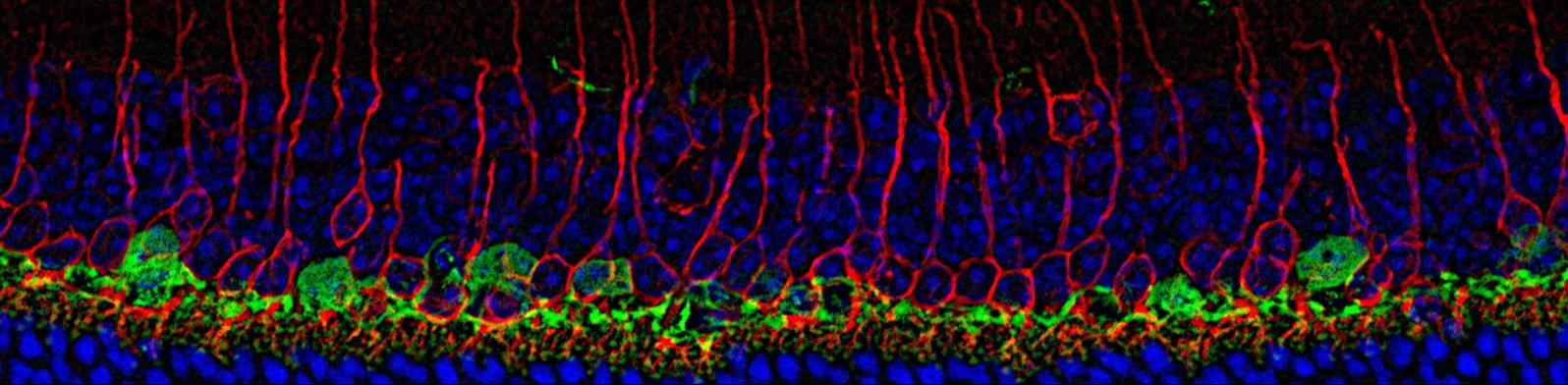
## **17:15- POSTER SESSION 2 with SNACKS**

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# Day 3: Organotypic Retina Cultures in testing advanced therapy and drug delivery aspects

## Lecture session 6: Gene therapy and RNA approaches

- 9:00-9:05: **CONFERENCE PICTURE, BE THERE!**
- 9.05-9.50: Testing AAV vectors, CRISPR-based approaches, and alternative gene-editing tools: **Yuanyuan Chen**
- 9.50-10.25: RNA interference, RNA therapeutics: **Marco Bassetto**
- Short break 10.25-10.30

Distinguished keynote speaker



**Krzysztof Palczewski**

## Late morning/Afternoon Session: Ocular drug delivery

10.30-11.30: **Keynote 2 – Biochemistry at the Core of Retina**

**Research: Past, Present, and Future**

LUNCH BREAK 11.30-12.30

## Lecture session 7: Studying barriers and Drug Delivery with Tissue Cultures

- 12:30-13:15: Porcine Single-Eye Retinal Pigment Epithelium Cell Culture for Barrier and Polarity Studies (1/2): **Alexa Klettner**
- 13.15-14.00: Studying drug delivery with explants: **Blanca Arango-Gonzalez**

## Evening Session: Industry & Venture Science in Retinal Research

- 14:00-14.45: Industry roles for retinal researchers, biotech innovation, and venture science: **Jukka Puoliväli, Giedrius Kalesnykas**

COFFEE BREAK 14:45-15:15

- 15.15-16.00: Spinning off from academia and start ups: **Teemu Turunen, Frans Vinberg**
- 16.00-16.30: How to attract angel investors or venture capital: TBD
- 16.30-18.00: FREE TIME

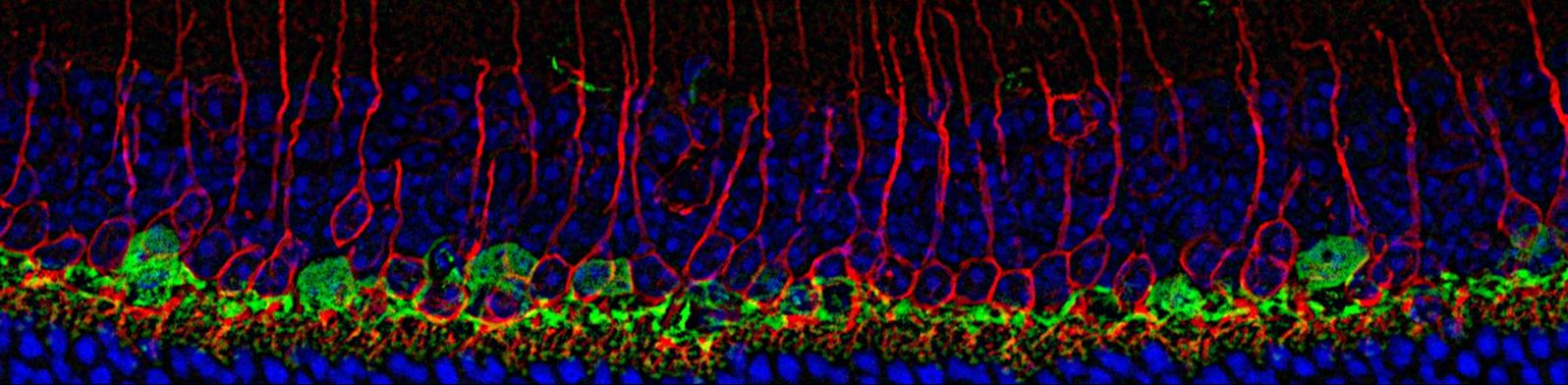
## 18:00-late: LAKE KALLAVESI CRUISE & NETWORKING

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# Day 4: End-point assays + functional testing in living retinas

## Lecture session 9: Conventional end-point assays in organotypic retina culture experiments

- 9-9.45: Histology/IHC staining and microscope: challenges and common pitfalls **Catherine Hottin, Ana Almansa Garcia, François Paquet-Durand, Blanca Arango-Gonzalez**
- 9:45-10:30: Apoptosis and other sensitive cell death assays **Catherine Hottin, Ana Almansa Garcia, François Paquet-Durand, Blanca Arango-Gonzalez**
- Break 10:30-10:40
- 10:40-11:25 Assays with homogenates: Immunoblots, qPCR, ELISA etc: **Henri Leinonen lab**
- 11:25-12:10 Preparation for omics (RNA-seq, proteomics etc.) **Henri Leinonen Lab**

LUNCH BREAK 12.10-13.00

## Lecture session 10: Electrophysiology / Functional Analysis

- 13.00-13.45: Ex vivo electroretinogram: **Teemu Turunen**
- 13:45-14:30: Patch-clamp: **Petri Ala-Laurila**
- 14:30-15:15 Single-cell recordings from photoreceptors: **Raunak Sinha**

COFFEE BREAK 15.15-15.45

- 15.45-16:30: Selected abstracts flash talks (21-30)
- 16:30-17:00 FEBS Representative **Jan Riemer**

## Evening Session: Choosing the Right Postdoc & Career Paths

- 17:00-18:00 Panel Discussion: Surviving & Thriving in a Postdoc Position – **young generation PIs**

Insights from Pis. Including: Academia vs. Industry, key considerations, networking, and career trajectory planning

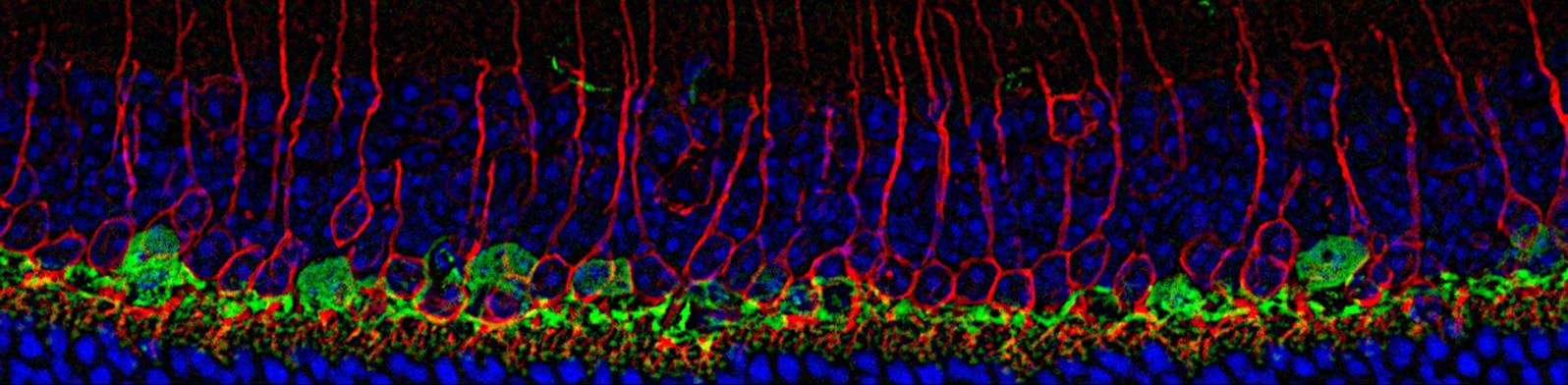
**18.00 - POSTER SESSION 3 with SNACKS**

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# Day 5: The Retina as a Model for Neuroscience Applications

## Morning Session:

9.00-9:50 **Keynote lecture 3: Critical Factors for Success in Retinal Research: A Personal Perspective**

- Short break 9:50-10:00

**Lecture session 11: The Retina as an Accessible Model for neuroscience and CNS Research**

- 10-10.45: Synaptic transmission: **Frans Vinberg**
- 10:45-11:10 Complex neuronal circuits: **Petri Ala-Laurila**

LUNCH BREAK 11.10-12:00

- 12:00-12:20 Complex neuronal circuits: **Raunak Sinha**
- 12.20-13.05 Synaptic plasticity: **Henri Leinonen**
- 13:05-13:15: Short break

## Afternoon Session:

### Demo/tutorial Session based on video material:

- 13.15-14.00: Neuronal Activity Recording in Isolated Retinas: TBD

### COFFEE BREAK 14.00-14.30

- 14.30-15.30 Group discussion: Ex vivo versus in vivo – opportunities, challenges and pitfalls: **everyone, what did we learn during this week?**
- Awards ceremony and pictures

### 15.30-16.00: Event conclusion and future ideas

Keynote speaker



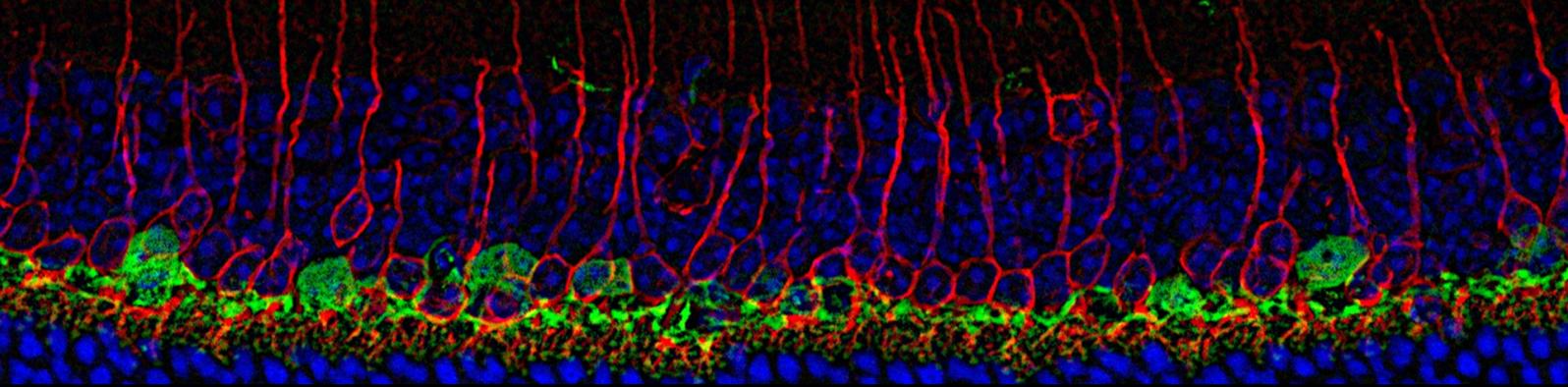
**Marius Ueffing**

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# Course Goals and Outcomes

- ✓ Knowhow of organotypic retina culture techniques
- ✓ Understanding of disease modeling, drug testing, and neuroscience applications
- ✓ Experience with imaging, functional assays, and gene therapy applications
- ✓ Knowledge of publishing, grants, and career development

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