



European Association for Vision and Eye Research



EVER

2019

October 17-19 in Nice, France

www.everassociation.org

PROGRAM

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Word from the President

Dear colleagues and friends,

It is for me a great pleasure to invite and welcome you to the 22nd EVER Congress, which will be held in Nice on October 17-19, 2019.

The Ophthalmology world is fast evolving and requires keen cooperation and harmonization between research, device innovations, and technical refinements. The European Association for Vision and Eye Research (EVER) aims at encouraging the different aspects of research - basic, clinical and translational - concerning the eye and vision, and to promote mutual collaboration between different specialists and institutes involved in this field by means of publications, exchange of information and, particularly, meetings like the one I have the privilege to invite all of you.

On behalf of the EVER community, I want to offer you my warmest welcome. With your participation and support we will make the 22nd EVER Congress in Nice an enriching and memorable experience for everybody attending!

Professor Rafael I. Barraquer, MD, PhD
EVER President



About EVER

The European Association for Vision and Eye Research, EVER, is a non-profit organization, whose aim is to encourage research and dissemination of knowledge in ophthalmology and visual sciences, by means of meetings, publications, and exchange of information. The EVER Annual Congress provides an umbrella for all the other ophthalmological societies and a unique and excellent place for networking.

www.everassociation.org

EVER MEMBERSHIP

EVER currently has members from 50 countries all over the world and represented by 11 scientific sections. Membership is open to individuals of any nationality, engaging in or with an interest in ophthalmic and vision research. Applications for membership - available on www.everassociation.org - may be submitted at any time, membership is on calendar year basis and starts on January 1. Every member must select one of the 11 scientific sections that best represents his or her primary area of interest.

The benefits of EVER membership are:

- significantly reduced registration fees for annual meeting
- submission of abstracts at annual meeting
- organizing Special Interest Symposia (SIS) and Courses
- free electronic subscription to the EVER journal, Acta Ophthalmologica (IF 3.324)
- voting rights for the election of the Board Members
- travel supports and poster prizes
- quarterly E-Newsletter

Elections 2019

Cast your vote for the elections of:

- Anatomy - Cell biology (Szabolcs Béla FELSZEGHY, Heli SKOTTMAN)
- Electrophysiology - physiological Optics - Vision Sciences (Pedro DE LA VILLA, Franziska G. RAUSCHER)
- Molecular-Biology-Genetics- Epidemiology Section leader (Petra LISKOVA, Christina ZEITZ)
- Treasurer (László MODIS, Roy Andrew QUINLAN)
- General Secretary (Anu KAUPPINEN, Marcela VOTRUBA)

They will be elected by online voting.

Voting will close on Thursday, October 17, midnight.

The result of the elections will be announced at the General Assembly on Friday, October 18, 19:15 - 19:45.



APP

Download **EVER 2019** App now! How does it work?

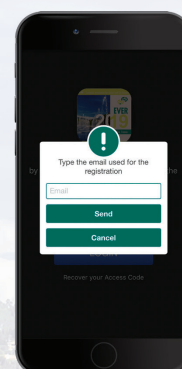
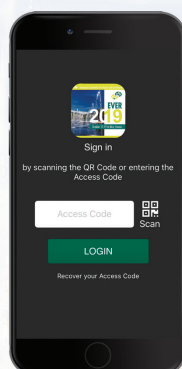
1 Simply go on **Google Play** or on **App Store** and search for **EVER 2019**. Click on it to install the App.



2 Once the download is complete, open the App and enter your **Access Code**, received by email and printed on your badge.

3 If you do not remember your access code, **click on Recover your password** and type the email used during registration. You will receive an email with your new access code.

4 Well done! Now you are ready to use and enjoy your App.



Media Partners

Acta Ophthalmologica

Acta Ophthalmologica is the official scientific publication of the European Association for Vision and Eye Research. Acta Ophthalmologica publishes clinical and experimental original articles, reviews, editorials, educational photo essays (Diagnosis and Therapy in Ophthalmology), case reports and case series, letters to the editor and doctoral theses. eu.wiley.com

Ophthalmology Times
EUROPE

touch
OPHTHALMOLOGY®

Composition of the board 2019

EXECUTIVE COMMITTEE

President
Secretary General
Treasurer
Programme Secretary
President Elect
Vice President
Vice President Elect
Past President
EVERf liaison

Rafael I. Barraquer, Barcelona (2018-2019)
 Alain Bron, Dijon (2018-2019)
 Steffen Heegaard, Copenhagen (2014-2019)
 Francesca Cordeiro, London (2016-2021)
 Kai Kaarniranta, Kuopio (2018-2019)
 Peter Wiedemann, Leipzig (2018-2019)
 Miguel Castelo-Branco, Coimbra (2018-2019)
 Alain Bron, Dijon (2018-2019)
 Harminder Dua, Nottingham (2017-2021)

CHAIR OF SECTIONS

ACB: Anatomy/Cell Biology
COS: Cornea/Ocular Surface
EOVS: Electrophysiology / Physiological Optics / Vision Sciences
G: Glaucoma
IM: Immunology/Microbiology
LC: Lens and Cataract
MBGE: Molecular Biology/Genetics/Epidemiology
NSPH: Neuro-ophthalmology/Strabismology/Paediatric/History
PO: Pathology/Oncology
PBP: Physiology/Biochemistry/Pharmacology
RV: Retina/Vitreous

Kai Kaarniranta, Kuopio (2014-2019)
 Nora Szentmary, Budapest (2017-2022)
 Miguel Castelo-Branco, Coimbra (2014-2019)
 Sayeh Pourjavan, Brussels (2017-2022)
 Piergiorgio Neri, Ancona (2016-2021)
 Andrzej Grzybowski, Poznan (2018-2023)

Dominique Bremond-Gignac, Paris (2015-2020)
 Frédéric Mouriaux, Rennes (2015-2020)
 Manuel Vidal Sanz, Murcia (2016-2021)
 Francine Behar-Cohen, Paris (2018-2023)

SENIOR ADVISORY COMMITTEE

Senior adviser

Jean-Jacques De Laey, Ghent (2015-2020)

YOUTH ADVISORY COMMITTEE

Youth adviser

Gauti Johannesson

LOCAL REPRESENTATIVE

Local representative in France

Stephanie Baillif, Nice

EVER REPRESENTATIVES IN ACTA BOARD

EVER-Acta
EVER-Acta

Aki Kawasaki, Lausanne (2018)
 Steffen Heegaard, Copenhagen (2018)

INDUSTRY LIAISON

Industry Liaison

Francine Behar-Cohen, Paris

COMMUNICATION COMMITTEE

Communication committee
Communication committee

Andrzej Grzybowski, Poznan
 Nora Szentmary, Budapest

General Information

CONGRESS VENUE

Acropolis Convention Center
1, Esplanade Kennedy
06364 Nice cedex 4
Nice, France

REGISTRATION DESK AND SECRETARIAT OPENING HOURS

Thursday, October 17th 07:30-18:00
Friday, October 18th 07:30-18:00
Saturday, October 19th 07:30-18:00

INTERNET ACCESS

Wi-Fi internet access is available
in the Convention Center.

Wi-Fi login code: ever2019

username: **ever2019**

CME CREDITS

Continued Medical Education credits

The 22nd EVER Congress, Nice, France, 17/10/2019-19/10/2019 has been accredited by the European Accreditation Council for Continuing Medical Education (EACCME®) with 17 European CME credits (ECMEC®s). Each medical specialist should claim only those hours of credit that he/she actually spent in the educational activity. Through an agreement between the Union Européenne des Médecins Spécialistes and the American Medical Association, physicians may convert EACCME® credits to an equivalent number of AMA PRA Category 1 Credits™. Information on the process to convert EACCME® credit to AMA credit can be found at www.ama-assn.org/education/earn-credit-participation-international-activities. The EACCME® awards ECMEC®s on the basis of 1 ECMEC® for one hour of CME with a maximum of 8 ECMEC®s per day.

ECMECs breakdown per day:

October 17, 2019	5.00
October 18, 2019	6.00
October 19, 2019	6.00

The CME questionnaire will be available on the congress website - www.ever2019.org - from 19 October to 9 November 2019. Please note that the registration code, printed on your badge, is necessary to access the CME questionnaire. The Accreditation Certificate will be sent via e-mail once the online evaluation form is completed and your attendance records have been checked.

PUBLICATION OF THE ABSTRACTS

The abstracts of the 22nd EVER Congress will be published on-line in a special autumn issue of Acta Ophthalmologica, the EVER journal. Access for members-only through EVER homepage.

PHOTOGRAPHY AND VIDEO MATERIAL

Please, note that during the 22nd EVER Congress photos and videos will be taken. Images could be uploaded on the event's websites or EVER's and/or OIC's communication channels in order to prove and show the success of the meeting in terms of participation, until the next edition. Should you wish to have your picture or video removed, please let us know and we will take action accordingly.

ORGANIZING SECRETARIAT



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Tel. +39 055 50351 - Fax +39 055 5001912
www.oic.it - info@oic.it - www.ever2019.org



OIC Srl is a MedTech Trusted Partner

REGISTRATION FEES ON-SITE

Everyone attending the scientific sessions
whether or not an EVER member
must register and pay the registration fee.

<i>Member / Course invited speakers</i>	546€
<i>Member-in-training</i>	275€
<i>Non-member</i>	960€
<i>Non-member-in-training</i>	440€
<i>Eye-Care / Technician / Nurse</i>	220€

Speakers Information

SLIDE CENTRE OPENING HOURS

Wednesday, October 16 th	16:00-18:00
Thursday, October 17 th	07:30-18:00
Friday, October 18 th	07:30-18:00
Saturday, October 19 th	07:30-18:00

GUIDELINES FOR SPEAKERS

All presentations shall be forwarded to the Slide Centre at least two hours before the presentation time, or the day before if your session is scheduled for the first session of the day.

After you have uploaded your presentation, it will be checked and tested, and then projected in the correct meeting room. Computer projection only will be available.

The management of all the projections will be entrusted to a single system that will automatically forward the presentations in the meeting room; it will be not possible to use personal laptops.

Speakers are kindly requested to use PowerPoint for Windows only (the latest version of Microsoft office will be supported). In case of MAC presentations presenters are kindly invited to bring their own laptop and adaptors to connect to the onsite system.

Poster Presenters

Posters will be displayed in the Exhibition Area



Programme Information

EVER GENERAL ASSEMBLY

Friday, October 18th from 19:15 to 19:45 in room Hermes

FOR MEMBERS ONLY

Agenda see page 50

PRIZE AWARD CEREMONY AND CLOSING REMARKS

Saturday, October 19th from 16:45 to 18:00 in room Hermes

Agenda see page 70

WOMEN 4 EVER

Women 4 EVER wishes to assist women in developing tools for career advancement and to foster gender equality in ophthalmology and visual science.

We encourage mentorship, collaboration, and communication. In this informal and open session, we invite all interested members of EVER to come and meet colleagues, share experiences and ask for advice. It is also a venue where ideas about gender-based studies in ophthalmology may be developed.

Saturday, October 19th from 12:30 to 13:45 in room Gallieni 1+2

See page 60.

COFFEE WITH PROFS

In an initiative to encourage dialogue amongst speakers and EVER members, we have organised a session called "Coffee with Profs". This will be a table of 6-8 "guests" at a table headed by one of the EVER speakers:

- Alain Bron
- Francesca Cordeiro
- Neville Osborne
- Gordana Sunaric Megevand
- Manuel Vidal Sanz
- Marcela Votruba

The idea is to provide a casual yet personal venue where colleagues, in particular the younger faction, can share comments and ideas with an expert.

Thursday, October 17th from 16:00 to 17:00 in poster area

Friday, October 18th from 14:45 to 15:45 in poster area

See pages 26 and 41

YOUNG INVESTIGATORS' AWARD

The best Rapid Fire abstracts from young authors of each section will be presented in these sessions.

Saturday, October 19th from 14:15 to 15:30 and from 15:30 to 16:45 in Hermes.

YOS SESSION

Friday, October 18th from 13:30 to 14:45 in Gallieni 1+2

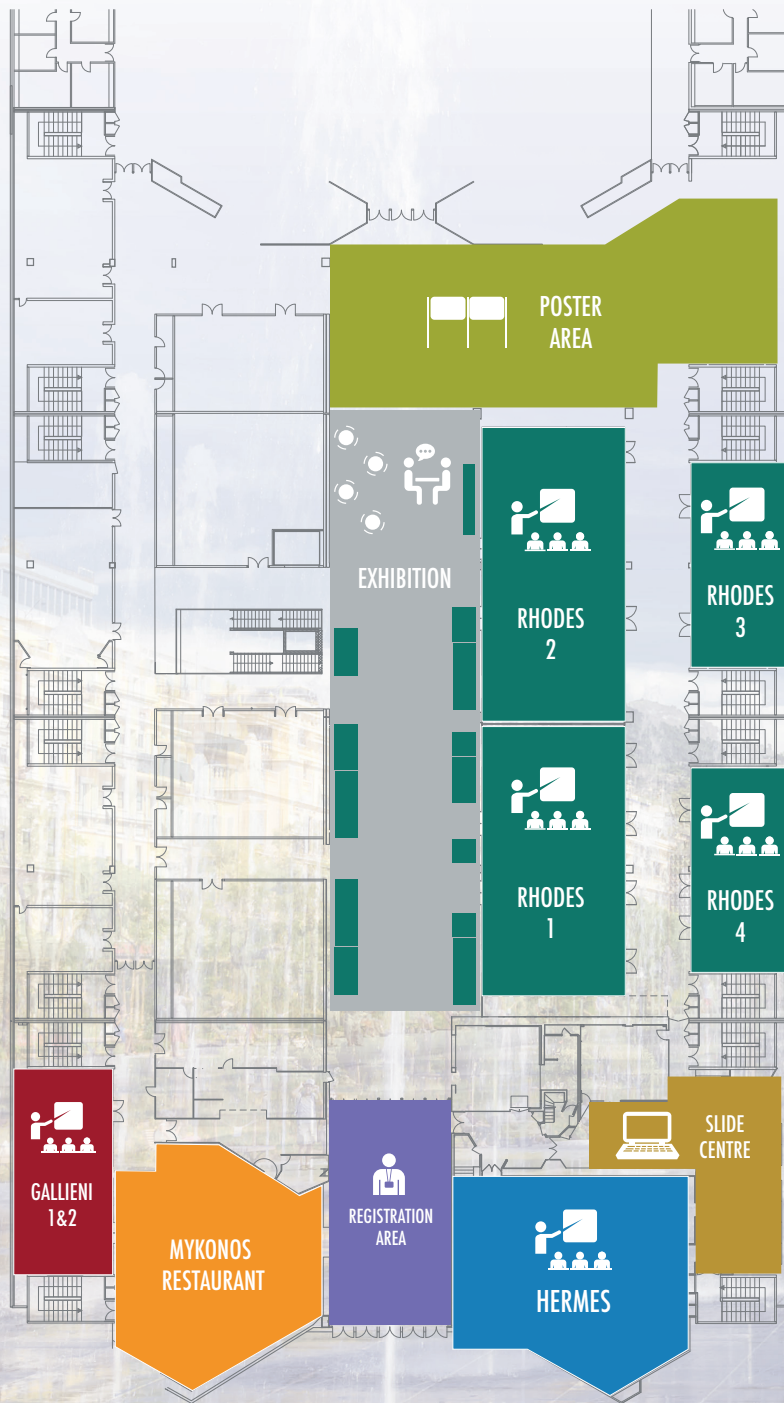
EVER POSTER PRIZES

Poster Prizes will be awarded for the best posters across all sections.

The winners will be chosen by the poster moderators and will be announced in the Prize Award Ceremony on Saturday, October 19th, 16:45 - 17:00 in Hermes. No prize will be given after the congress.

The winners will be waived registration to the EVER congress 2020.

Floorplan



Exhibition Map



COMPANY	EXHIBITION SPACE CODE
Cambridge Research Systems	15
Diagnosys	14
Horama	9
Horus Pharma	13
Imedos Systems	12
Novartis	3
OcuScience	1
Santhera	4
Striatech	7
Théa	5
University of Eastern Finland	6
Wisepress	11

Acknowledgements

EVER Society wishes to express its gratitude to all Sponsors for their generous support to the Congress

Sponsors



About the programme book

Sessions

BM

Business Meeting

POS

Poster Session

CIS

Industry Sponsored Symposium

PS

Plenary Session

C

Course

RF

Rapid Fire Session

JM

Joint Meeting

SOC

Social

KN

Keynote Lecture

SIS

Special Interest Symposium

Symbols

TS

= EVER section travel support recipient

rf

= Rapid Fire presentation

rf

= Best Rapid Fire presentation

*

= Conflict of interest disclosed

Scientific sections

ACB	=	Anatomy / Cell Biology
COS	=	Cornea / Ocular Surface
EOVS	=	Electrophysiology, Physiological Optics, Vision Sciences
G	=	Glaucoma
IM	=	Immunology / Microbiology
LC	=	Lens and Cataract
MBG	=	Molecular Biology / Genetics / Epidemiology
NSPH	=	Neuro-ophthalmology/Strabismology / Paediatric Ophthalmology / History of Ophthalmology
PBP	=	Physiology / Biochemistry / Pharmacology
PO	=	Pathology / Oncology
RV	=	Retina / Vitreous Section programme secretaries

08:30-08:45 | HERMES

PS

Welcome

Welcome by the EVER President 2019
Rafael I. Barraquer (Barcelona - Spain)

08:45-09:10 | HERMES

PS

Ophthalmic Research Lecture

Introduced by Maria Francesca Cordeiro

Understanding AMD from lab and clinical studies
Andrew Lotery (Southampton - United Kingdom)

Tremendous progress has been made in understanding the aetiology and the development of treatments for age related macular degeneration over the last twenty years. This lecture will review this progress and discuss the current unmet needs in terms of understanding aetiology and developing better therapies. It will highlight the importance and synergy of clinical and laboratory studies and what the next steps might be in understanding and treating this devastating disease.



09:15-09:45 Coffee break - Exhibition Area

09:45-11:00 | HERMES

SIS

2324 - RV/IM Exploring retinal ischemia: from biological pathways to clinical implications

Retinal ischemia is a common clinical feature and a fundamental step in the pathophysiology of a wide range of retinal disorders of vascular or inflammatory origin. However, its mechanisms are diverse and not fully elucidated. The development of retinal ischemia is induced by several cellular angiogenic signaling pathways under stress conditions (metabolic stress in diabetic retinopathy, intravascular hydrostatic and hypoxic stress in retinal vein occlusions, oxidative and radiation-induced stress in radiation maculopathy, etc). This Symposium will cover major retinal vascular entities: diabetic retinopathy, retinal vein occlusion, radiation retinopathy, and the rare entity type 1 macular telangiectasia that provides an interesting model of primarily vascular ischemic disorder. It will address current mechanistic hypotheses regarding their pathophysiology, with an emphasis on recent data regarding the role of placental growth factor in activating the VEGFR-1 pathway, and the involvement of Rho kinase in intravascular cell blebbing. Therapeutic implications of these new concepts will be discussed.

Chairmen: **Francine Behar-Cohen** (Paris - France), **Alexandre Matet** (Paris - France)

- | | | |
|-------|-------|---|
| 8042 | 09:45 | Retinal ischemia in radiation retinopathies: radiobiological concepts and clinical spectrum
Jeremie Villaret (Paris - France) |
| 8130* | 10:00 | Molecular and cellular consequences of retinal ischemia
Francine Behar-Cohen (Paris - France) |
| 8133 | 10:15 | Involvement of the PIGF/VEGFR1 pathway in diabetes and type 1 retinal telangiectasia
Laura Kowalczyk (Lausanne - Switzerland) |
| 8167 | 10:30 | Role of Rho kinase pathway in diabetic retinopathy: from a diabetic rat model to human eye pathology
Pierre-Raphael Rothschild (Paris - France) |
| 8197 | 10:45 | Potential mechanisms to reverse BRVO related retinal ischemia
Constantin Pournaras (Geneva - Switzerland) |

09:45-11:00 | RHODES 1

SIS

2282 - G OCT in glaucoma: image interpretation, data analysis and beyond

Assessing patients for glaucomatous progression requires the combined evaluation of multiple parameters. These parameters are ever-increasing and could present an array of sometimes conflicting analyses. Such parameters include peripapillary RNFL thickness, Macula Thickness and Bruch's membrane opening. One of the objectives of this SIS is to discuss current interpretation of OCT parameters for glaucoma diagnosis and follow up. After diagnosis, robust follow-up methods are essential. Current OCT are equipped with useful progression analysis software which have moderate capability of discrimination between age-related changes, instrument's intrinsic noise, and real changes. The second objective of this SIS is to discuss novel graphical representation of glaucomatous progression combining spatial and temporal data. The role of OCT macula scans in glaucoma has also been extensively investigated. However, to date, despite the establishment of state-of-the-art retinal imaging technology, only subjective and qualitative analyses can be performed for macula scans in glaucoma. The third objective of this SIS is to discuss a novel method to objectively assess glaucoma progression based on the longitudinal analysis of the Poster Pole.

Chairman: **Eduardo Maria Normando** (London - United Kingdom)

- | | | |
|-------|-------|---|
| 8106 | 09:45 | Harnessing the power of OCT imaging in clinic by smart data analysis and presentation
Timothy Yap (London - United Kingdom) |
| 8122 | 10:10 | Objective assessment of progressive macular changes in glaucoma
Eduardo M. Normando (London - United Kingdom) |
| 8266* | 10:35 | Detecting structural progression
Andrew Tatham (Edinburgh - United Kingdom) |

09:45-11:00 | RHODES 2

SIS

2262 - MBGE/NSPH Mitochondrial optic neuropathies -from genes to disease mechanisms to treatments

Primary inherited optic neuropathies are a group of blinding genetic disorders in which optic atrophy secondary to loss of retinal ganglion cells is a clinical key feature. The commonest causes world-wide is mutation in mitochondrial DNA (causing Leber's Hereditary Optic Neuropathy) and OPA1 mutations (causing Autosomal Dominant Optic Atrophy: ADOA). Inherited optic neuropathy is an 'orphan' disease. Recent trials of drugs and gene therapy in patients with Leber's hereditary optic neuropathy, have shown the first glimmer of hope for the treatment of this group of patients. At this exciting time this SIS will focus on disease mechanisms and clinical phenotyping and novel therapies.

Chairmen: **Patrick Yu-Wai Man** (Cambridge - United Kingdom), **Marcela Votruba** (Cardiff - United Kingdom)

- | | | |
|-------|-------|---|
| 8008* | 09:45 | Pattern of RGCs loss in toxic optic neuropathies
Piero Barboni (Bologna - Italy) |
| 8015 | 10:00 | New insights in the genetic and pathophysiology of dominant optic atrophy
Guy Lenaers (Angers - France) |
| 8043* | 10:15 | Treatment paradigms for mitochondrial optic neuropathies
Chiara La Morgia (Bologna - Italy) |
| 8071 | 10:30 | Disease penetrance in LHON - unravelling the puzzle
Rustum Karanjia (Ottawa - Canada) |
| 8175* | 10:45 | Non-OPA1 genetic causes of dominant optic atrophies
Bernd Wissinger (Tuebingen - Germany) |

09:45-11:00 | RHODES 3

SIS

2295 - ACB Personalized medicine for inherited and complex retina diseases

Personalized medicine aims to improve patient care by adjusting medication to each patient's individual needs. Many inherited retinal degenerations and age-related macular degeneration (AMD) represent a diverse group of progressive, visually debilitating diseases that can lead to blindness. Various mutations in genes that are critical to retinal function changes between patients that evoke different phenotype of diseases. Moreover, the risk factors driving the disease differ per patient. In our SIS, we provide an overview of the current knowledge and gaps for inherited and complex retina diseases. Predominantly we focus on diagnostic technology, genetic biomarkers, but also include studies that examined treatment responses in inherited retinal degenerations and AMD. In addition, we highlight new inducible Pluripotent Stem Cell (iPSC) experimental models to study molecular mechanism and therapeutic approaches in inherited and complex retina diseases.

Chairmen: **Kai Kaarniranta** (Kuopio - Finland), **Hannu Uusitalo** (Tampere - Finland)

- | | | |
|-------|-------|---|
| 8084 | 09:45 | Human induced pluripotent stem cell-derived retinal pigment epithelial cell model of Sorby fundus dystrophy
Heidi Hongisto (Kuopio - Finland) |
| 8099* | 10:03 | Pseudoxanthoma elasticum
Pasi Nevalainen (Tampere - Finland) |
| 8208 | 10:21 | Expression of VEGFA-regulating miRNAs and mortality in wet AMD
Janusz Blasiak (Lodz - Poland) |
| 8306 | 10:39 | Retinal diseases and prospects for therapy in the genomic era
Andrew Lotery (Southampton - United Kingdom) |

09:45-11:00 | RHODES 4

SIS

2328 - PO/COS IC3D classification of corneal dystrophies: new developments

In 2015, the IC3D collaboration released its 2nd edition of classification for corneal dystrophies, based on analysis of worldwide peer-reviewed articles for new information published from 2008 to 2014. Thereafter, new developments have taken place as regards some of these dystrophies. This symposium will summarise the changes introduced in the IC3D second edition against current evidence. Especially, it will review the differential diagnosis of corneal dystrophies as a cause of recurrent corneal erosions in light of the recent identification of COL17A1 pathogenic variants as a cause of a specific epithelial recurrent erosions dystrophy. Moreover, the murky borderline between corneal developmental defects and corneal dystrophies will be discussed using posterior amorphous corneal dystrophy as a starting point. An emerging new category of punctiform and polychromatic pre-Descemet corneal dystrophy will also be described.

Chairmen: **Tero Kivelä** (Helsinki - Finland), **Walter Lisch** (Bruchkoebel - Germany)

- | | | |
|-------|-------|--|
| 8249* | 09:45 | IC3D second edition: an update
Tero Kivelä (Helsinki - Finland) |
| 8252* | 10:00 | Corneal recurrent erosions dystrophy in citizens and migrants in Finland
Joni Turunen (Helsinki - Finland) |
| 8251 | 10:15 | Corneal dystrophies as a cause of recurrent erosions
Walter Lisch (Bruchkoebel - Germany) |
| 8264 | 10:30 | Corneal recurrent erosions dystrophies in Sweden
Berit Byström (Finland) |
| 8265 | 10:45 | Clinical pathological correlations in Meretoja corneal lattice amyloidosis
Jaakko Mattila (Finland) |

09:45-11:00 | GALLIENI 1&2

SIS

2297 - EOVS/NSPH advances in clinical colour assessment

Recent advances in methods for colour assessment as well as our understanding of the mechanisms involved in the processing of chromatic signals have increased the usefulness of colour vision assessment in the clinic. The establishment of upper normal, age limits for Red/Green (RG) and Yellow/Blue (YB) colour thresholds makes it possible to screen for normal colour vision and to detect and classify congenital deficiency with close to 100% sensitivity and specificity. As a result of increased sensitivity and specificity, acquired loss of RG and YB colour vision can provide very useful information and has become an important clinical tool in the detection and monitoring of diseases such as diabetes, age-related macular degeneration and glaucoma. Results from several studies employing different colour assessment techniques will be presented and compared. Statistical outcomes of the most common colour assessment techniques and protocols that are often employed in the clinic will also be discussed. Findings from ongoing clinical trials will be used to illustrate the advantages of novel colour assessment methods in screening for colour vision changes in patients at risk of developing diabetes.

Chairmen: **John Barbur** (London - United Kingdom), **Gordon Plant** (London - United Kingdom),
Marisa Rodriguez Carmona (London - United Kingdom)

- | | | |
|-------|-------|---|
| 8023* | 09:45 | Colour assessment in patients at risk of developing diabetes
Marisa Rodriguez-Carmona (London - United Kingdom) |
| 8112 | 10:00 | Abnormalities of vision and colour vision in Parkinson's disease
Louise Ann Leyland (London - United Kingdom) |
| 8145 | 10:15 | The role of the retina in colour vision impairments in ophthalmological and neurological disorders
Miguel Castelo Branco (Coimbra - Portugal) |
| 8224* | 10:30 | Assessing loss of colour vision in patients with clinical disorders
John L. Barbur (London - United Kingdom) |
| 8258 | 10:45 | Assessing colour vision in the clinic: when is it useful and could we do better
Gordon Plant (London - United Kingdom) |

11:00-11:25 | HERMES

PS

EVER Lecture delivered by the Past President

Introduced by Rafael I. Barraquer

Lipids and the eye, beyond fat
Alain Bron (Dijon - France)

Even though great lipids experts have already brought their knowledge on the EVER stages, lipids as a whole are not really considered as they should, taking in consideration their important role in eye physiology and eye diseases. The aim of this simple and humble journey through lipids is to stimulate the interest of young investigators for the fascinating world of lipids, from the tear film to the brain.

11:30-12:45 | HERMES

C

2290 - ACB Ultrastructural and biogenetic analyses of retinal pigment epithelium and photoreceptors during pathological age-related process

Chairmen: Szabolcs Felszeghy (Kuopio - Finland), Magali Saint-Geniez (Boston - USA)

- | | | |
|------|-------|---|
| 5016 | 11:30 | Basics for ultrastructures in transmission electron microscopy
Kai Kaarniranta (Kuopio - Finland) |
| 5025 | 11:48 | Beyond our vision: Ultrastructural lesson from the analysis of PGC1-a/Nrf-2 compound null mutant mice retina
Szabolcs Felszeghy (Kuopio - Finland) |
| 5026 | 12:06 | Expression of VEGFA-regulating miRNAs and mortality in wet AMD
Janusz Blasiak (Lodz - Poland) |
| 5041 | 12:24 | Understanding organelle biogenesis during the autophagy process in the RPE
Debasish Sinha (Pittsburg - USA) |

11:30-12:45 | RHODES 1

SIS

2313 - G Glaucoma surgery: how to manage the failing

Glaucoma Surgery is very effective at achieving good and long-term pressure control with an acceptable safety profile. However there are patients for whom a previously successful procedure starts to fail. In this symposium we will discuss a variety of cases and surgical procedures where revision is required to regain control of the pressure and glaucoma progression. We will aim to provide previous personal experience involving surgical videos from a range of international experts with practical techniques along with evidence from the literature on how to manage cases of failing trabeculectomies, tubes, MIGS (minimally invasive glaucoma surgery) and the macula.

Chairmen: **Laura Crawley** (London - United Kingdom), **Alastair Porteous** (Kingston Upon Thames - United Kingdom)

- | | | |
|-------|-------|--|
| 8061 | 11:30 | Glaucoma Surgery - How to manage the failing trabeculectomy
Laura Crawley (London - Ireland) |
| 8108 | 11:48 | Glaucoma surgery; how to manage the failing tube
Dimitrios Besinis (Athens - Greece) |
| 8113 | 12:06 | Glaucoma surgery; how to manage failing MIGS
Alastair Porteous (London - United Kingdom) |
| 8225* | 12:24 | How to manage the failing tube
Faisal Ahmed (London - United Kingdom) |

11:30-12:45 | RHODES 2

SIS

2338 - PBP/MBGE Usher Syndromes: from genes to therapies

Usher syndromes (USH) are a group of ophthalmological rare diseases characterized by retinitis pigmentosa and partial or total sensorineural hearing loss. 3 major clinical types and 15 genes/17 USH loci are described. In the last few years, next generation sequencing techniques have improved and accelerated the USH diagnosis. Together with this, clinical trials for new promising treatments, mainly based in gene therapy, have appeared, to treat the impaired vision of USH patients. This symposium will address these advances.

Chairmen: **Carmen Ayuso** (Madrid - Spain), **José Maria Millán** (Valencia - Spain)

- | | | |
|------|-------|---|
| 8097 | 11:30 | Introduction and clinical aspects in Usher syndromes
José M. Millán (Valencia - Spain) |
| 8174 | 11:48 | Antisense oligonucleotide-induced splice modulation for the treatment of Usher syndrome type 2A
Erwin van Wijk (Nijmegen - The Netherlands) |
| 8199 | 12:06 | Genetic landscape of Usher syndromes
Anne-Françoise Roux (Montpellier - France) |
| 8219 | 12:24 | Current and future gene-based therapies for Usher syndromes
Vasiliki Kalatzis (Montpellier - France) |

11:30-12:45 | RHODES 3

SIS

2300 - EOVS/NSPH Colour in employment

Normal, trichromatic colour vision is often required as a condition for employment in many visually demanding occupations. Recent studies have shown that people with anomalous, congenital trichromacy can perform the suprathreshold, colour-related tasks encountered in many occupations with the same accuracy as normal trichromats. The requirement for normal trichromatic colour vision has evolved as the 'safe', default option for some occupations, simply because minimum colour vision requirements that are safe cannot be established easily and continue to remain unknown in many environments. The aim of this symposium is to examine how well current colour assessment tests and protocols screen for normal trichromatic colour vision and quantify severity of colour vision loss in people with congenital and / or acquired deficiency. In addition, the symposium will also discuss new methods developed to establish bespoke, minimum colour vision requirements that can be justified on performance and safety grounds. The introduction of novel, colour assessment methods that can be used in optometric clinics to assess colour vision and to establish the severity of red / green and yellow / blue loss will also be discussed.

Chairmen: **Benjamin Evans** (London - United Kingdom), **Marisa Rodriguez Carmona** (London - United Kingdom)

- | | | |
|-------|-------|--|
| 8022* | 11:30 | Insights into the Farnsworth D15 test and its efficacy in occupational protocols
Benjamin Evans (London - United Kingdom) |
| 8141 | 11:48 | Analysis of current colour assessment protocols for the cabin crew
Ayşe Ozpınar (Istanbul - Turkey) |
| 8227* | 12:06 | Assessing the severity of colour vision loss – Implications for occupational environments
John L. Barbur (London - United Kingdom) |
| 8260 | 12:24 | One or many? Are there benefits for using test batteries for the classification of congenital colour vision deficiencies?
Gabriele Jordan (Newcastle upon Tyne - United Kingdom) |

11:30-12:45 | RHODES 4

SIS

2283 - MBGE Grand rounds in ophthalmic genetics in animal and man

This SIS will provide a forum to discuss clinical and molecular cases with peers and leaders from the field of ophthalmic genetics, with the specific aim to stimulate interaction between human and mouse ophthalmic geneticists. The format is simple and is comparable to that of the Grand Rounds in departments of ophthalmology around the World. All EVER participants are invited to come and discuss cases during this session. As such, the format will be similar to the FAN Club meeting.

Chairmen: **Bart Peter Leroy** (Ghent - Belgium), **Michel Roux** (Illkirch - France)

- | | | |
|------|-------|---|
| 8040 | 11:30 | Atypical corneal endothelial dystrophy
Petra Liskova (Prague - Czech Republic) |
| 8143 | 11:48 | Modeling spinocerebellar ataxia type 7 in the mouse
Michel Roux (Illkirch - France) |
| 8230 | 12:06 | Retinal degeneration development in Cnga1 deficient mouse
Oana Veronica Amarie (Neuherberg - Germany) |
| 8298 | 12:24 | Human Case
Bart Peter Leroy (Ghent - Belgium) |

11:30-12:45 | GALLIENI 1&2

SIS

2278 - COS/IM Current developments and future perspectives in DMEK

Descemet Membrane Endothelial Keratoplasty (DMEK) has become the standard therapy for corneal endothelial disease in many places. New developments are aimed at further standardizing the operation and at using it in partially complex changes of the anterior segment of the eye outside the standard situation of Fuchs's endothelial dystrophy. This symposium aims to present the current state of graft preparation, the use of prestripped and/or preloaded grafts, and new indications for DMEK.

Chairmen: **Björn Bachmann** (Cologne - Germany), **Marc Muraine** (Rouen - France)

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|------|-------|--|
| 8303 | 11:30 | Techniques for graft preparation in DMEK
Marc Muraine (Rouen - France) |
| 8107 | 11:45 | Strategies to improve corneal endothelial graft outcomes
Hannah Levis (Liverpool - United Kingdom) |
| 8149 | 12:00 | Outcome of DMEK with prestripped grafts
Philip Maier (Freiburg - Germany) |
| 8006 | 12:15 | Influence of donor size on outcome of DMEK
Deniz Hos (Cologne - Germany) |
| 8029 | 12:30 | Mini-DMEK for focal defects of Descemet's membrane
Björn Bachmann (Cologne - Germany) |

13:00-14:00 | RHODES 2

CIS

Lunchtime Industry Sponsored Symposium (see page 98)

14:15-14:40 | HERMES

KN

Keynote Lecture

Introduced by Francine Behar-Cohen

Mechanism of cone cells death in retinitis pigmentosa
Peter A. Campochiaro (Baltimore - USA)



Thursday
 17 October 2019

Retinitis pigmentosa (RP) is a group of diseases in which one of a large number of mutations causes death of rod photoreceptors. After rods die, cone photoreceptors slowly degenerate in a characteristic pattern. Rod cell death causes night blindness, but visual disability and blindness result from cone degeneration and therefore it is critical to determine the mechanisms by which it occurs. The death of rods reduces oxygen consumption resulting high tissue levels of oxygen in the outer retina. The excess oxygen stimulates superoxide radical production by mismatches in the electron transport chain in mitochondria and by stimulation of NADPH oxidase activity in cytoplasm. The high levels of superoxide radicals overwhelm the antioxidant defense system and generate more reactive species including peroxynitrite which is extremely damaging and difficult to detoxify. This results in progressive oxidative damage in cones which contributes to cone cell death and loss of function because drugs or gene transfer that reduce oxidative stress promote cone survival and maintenance of function. Oral administration of N-acetylcysteine (NAC) has shown good efficacy in mouse models of RP prompting the FIGHT RP1 open label clinical trial, the results of which will be presented.

14:45-16:00 | HERMES

SIS

2345 - PBP Industrial-academic complexity: how to translate research from academia to industry

Nowadays, pharmaceutical companies are searching innovation in the academic world and in start-up companies, which often are spin-off from the academic laboratories. Academic laboratories are increasingly interacting with industrial partners for technical and financial support. Society is expecting academic research to produce results that can be valorized and benefit to all of us. But the bridges that link these different entities remain to be strengthened and sometimes build. In this SIS, representative from industry, tech transfer department, academia and start-up will exchange and give their own point of view, and will give us advice to succeed crossing the bridges from academia to industry.

Chairmen: **Francine Behar-Cohen** (Paris - France), **Leonard Levin** (Montreal - Canada)

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|-------|-------|--|
| 8213* | 14:45 | The academic-industrial complexity
Leonard A. Levin (Montreal - Canada) |
| 8221* | 15:10 | Bridge research to industry: Thea Open Innovation
Emmanuel Muriaux (Clermont Ferrand - France) |
| 8238* | 15:35 | The reproducibility crisis
Francine Behar-Cohen (Paris - France) |

14:45-16:00 | RHODES 1

SIS

2336 - RV Dynamic and static retinal vessel assessment - Technology and possible clinical applications

The SIS will provide you with background on static and dynamic retinal vessel analysis as well as a snapshot of current research to evaluate its clinical utility.

Chairmen: **Rebekka Heitmar** (Birmingham - United Kingdom), **Sascha Klee** (Ilmenau - Germany)

- | | | |
|-------|-------|---|
| 8289* | 14:45 | Dynamic and static vessel analyses - background on technology and measurement principles
Walthard Vilser (Jena - Germany) |
| 8281 | 15:00 | Effects of technical and biological factors on the dynamic vessel analysis
Sascha Klee (Ilmenau - Germany) |
| 8282 | 15:15 | Retinal vessels before and after carotid endarterectomy
Marianne Ala-Kauhaluoma (Hämeenlinna - Finland) |
| 8271 | 15:30 | Longitudinal data of static and dynamic retinal vessel parameters
Rebekka Heitmar (Birmingham - United Kingdom) |
| 8283 | 15:45 | Dynamic retinal vessel analysis in Alzheimer's disease
Konstantin Kotliar (Juelich - Germany) |

14:45-16:00 | RHODES 2

SIS

2287 - MBGE/COS Anterior segment disorders: genetics, mechanisms and novel factors

Anterior segment ocular disorders include developmental conditions affecting the cornea, iris, lens, iridocorneal structures, and are often associated with visual impairment. Although a number of genetic causes have been identified, many of these conditions are still awaiting their genetic explanation. Identification of genetic factors allows for further studies into developmental and molecular mechanisms of these phenotypes, with a goal to eventually improve clinical management and treatment of affected families. This session will discuss genetic factors involved in various anterior segment phenotypes, including the identification of novel players, as well as their functional dissection in animal models.

Chairmen: **Petra Liskova** (Prague - Czech Republic), **Elena Semina** (Milwaukee - USA)

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|------|-------|---|
| 8024 | 14:45 | De novo missense variants in WDR37 cause a severe ocular syndrome
Elena Semina (Milwaukee - USA) |
| 8026 | 15:03 | Megalocornea in the Czech Republic - Additional clinical features and novel disease-causing variants
Petra Liskova (Prague - Czech Republic) |
| 8117 | 15:21 | Mutation in the mouse histone gene Hist2h3c1 leads to degeneration of the lens vesicle and severe microphthalmia
Oana Veronica Amarie (Munich Neuherberg - Germany) |
| 8154 | 15:39 | The role of Pax6 transcription factor in development of the anterior segment
Zbynek Kozmik (Prague - Czech Republic) |

14:45-16:00 | RHODES 3

SIS

2343 - G/IM Autoimmunity in glaucoma

Glaucoma is known as a multifactorial neurodegenerative disorder with intraocular pressure (IOP) as main risk factor. In the recent years several contributing factors were characterized and an involvement of autoimmunity was suggested. Different autoantibodies (e.g. beta2-adrenergic agonistic autoantibodies, antibodies against glial fibrillary acidic protein (GFAP)) have been described in glaucoma patients with potential different functions, as known up to now. Experimental and clinical studies provide sufficient data to show a distinct involvement of autoimmunity in glaucoma pathogenesis. The SIS: Autoimmunity in glaucoma – wants to provide an overview of recent data – in vitro and in vivo – regarding autoantibodies and their potential point of action (protective or even harmful) in glaucoma disease.

Chairmen: **Bettina Hohberger** (Erlangen - Germany), **Oksana Vitovska** (Kyiv - Ukraine)

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|-------|-------|--|
| 8137* | 14:45 | Agonistic beta2-adrenergic autoantibodies in glaucoma
Bettina Hohberger (Erlangen - Germany) |
| 8173 | 15:10 | Agonistic autoantibodies in ocular and systemic disease
Rudolf Kunze (Berlin - Germany) |
| 8287 | 15:35 | Autoimmunity and glaucoma
Franz Grus (Mainz - Germany) |

14:45-16:00 | RHODES 4

SIS

2308 - RV Laser photocoagulation of Telangiectatic capillaries (TelCaps) in retinal vascular diseases

During diabetic macular edema (DME) and retinal vein occlusion (RVO), it has been shown that focal vascular anomalies may play a central role. Indeed, their prevalence is estimated to be around 30% of DME cases. These abnormalities have received various denominations, such as capillary aneurysms, venous macroaneurysms... and may be collectively termed telangiectatic capillaries (TelCaps). They have in common a strong affinity for ICG. The systematic detection of TelCaps by ICG angiography followed by their OCT-controlled photocoagulation is of interest because it may diminish the need for intravitreal injections. We subsequently developed a procedure called Indocyanine green-Guided Targeted Laser photocoagulation (IGTL) which combines the detection of TelCaps by ICG angiography, their photocoagulation by laser, and immediate post-op OCT control. We have shown that targeted photocoagulation of those anomalies may improve vision while decreasing retinal edema, hence reducing the need for intra vitreal injection. The goal of this symposium is to contribute to the improvement of care in DME by discussing the various clinical presentations and management scheme of TelCaps.

Chairmen: **Bénédicte Dupas** (Paris - France), **Michel Pâques** (Paris - France)

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|-------|-------|--|
| 8012 | 14:45 | TelCaps in retinal vascular diseases: an overview
Michel Pâques (Paris - France) |
| 8017 | 14:57 | Indocyanine green angiography for identifying telangiectatic capillaries in diabetic macular edema
Daniela Castro Farías (Mexico - Mexico) |
| 8025 | 15:09 | Part 4. Laser photocoagulation of macroaneurysms : clinical cases in DME
Bénédicte Dupas (Paris - France) |
| 8075 | 15:21 | Technique of Laser photocoagulation of TelCaps; clinical cases in DME and other diseases
Marie-Noelle Delyfer (Bordeaux - France) |
| 8222* | 15:33 | Photocoagulation of telangiectatic capillaries using navigated Laser
Alexandre Pedinielli (Creteil - France) |
| 8268 | 15:45 | Pathophysiology of leakage and the special role of vascular abnormalities in DME
Reinier Schlingemann (Amsterdam - The Netherlands) |

14:45-16:00 | GALLIENI 1&2

C

2265 - COS Ocular surface thermography in health and disease

Thermal imaging (thermography) is a non-invasive procedure based on the use of thermal Infrared (IR) images recorded with a dedicated camera. IR thermography provides visual and qualitative information of temperature changes in both vascular tissues and avascular territories like the cornea. Although underutilized, ocular surface thermography may play an important role in the field of ophthalmology, constituting a non-invasive diagnostic tool which useful for the diagnosis of inflammatory and non-inflammatory ocular conditions.

Chairmen: **Juana Gallar** (San Juan De Alicante - Spain), **Nora Szentmary** (Budapest - Hungary)

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|------|-------|--|
| 5027 | 14:45 | Ocular thermography in normal subjects
Sarah Moussa (Salzburg - Austria) |
| 5020 | 15:03 | Ocular thermography in contact lens wearers
Gonzalo Carracedo (Madrid - Spain) |
| 5005 | 15:21 | Ocular thermography in keratoconus
Nora Szentmary (Budapest - Hungary) |
| 5004 | 15:39 | Ocular thermography in ocular inflammation and dry eye
Maria Carmen Acosta (Sant Joan D'Alacant - Spain) |

16:00-17:00 Coffee break - Exhibition Area**16:00-17:00 | POSTER AREA**

SOC

Coffee with Profs - Part 1

In an initiative to encourage dialogue amongst speakers and EVER members, we have organised a session called "Coffee with Profs". This will be a table of 6-8 "guests" at a table headed by one of the EVER speakers.

Alain Bron
Neville Osborne
Manuel Vidal Sanz
Marcela Votruba

The idea is to provide a casual yet personal venue where colleagues, in particular the younger faction, can share comments and ideas with an expert.

17:00-18:15 - HERMES

SIS

2280 - RV Idiopathic epiretinal membrane: Pathogenesis, evaluation, management and new developments

Idiopathic epiretinal membranes (ERM) represent areas of fibroglial proliferation in the vitreoretinal interface above the internal limiting membrane. In this special interest symposium, the pathogenesis of idiopathic epiretinal membranes will be analyzed. The diagnostic and post-operative evaluation of idiopathic epiretinal membranes with emphasis on new imaging modalities such as OCT, en face OCT and OCT-A will be discussed. Special attention will be given to the prognostic significance of OCT biomarkers. Furthermore the newest developments in the surgical management of ERM, the intraoperative OCT-guided peeling of ERM along with reported visual outcomes and complications will be presented

Chairmen: **Vasilios Papastefanou** (London - United Kingdom), **Tina Xirou** (Athens - Greece)

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|------|-------|--|
| 8014 | 17:00 | OCT Biomarkers for Idiopathic Epiretinal Membrane after pars plana vitrectomy
Irini Chatziralli (Athens - Greece) |
| 8027 | 17:15 | Intraoperative OCT guided peeling of ERM
Odysseas Georgiadis (London - United Kingdom) |
| 8090 | 17:30 | Pathogenesis of idiopathic epiretinal membrane
Evgenia Kontou (Athens - Greece) |
| 8094 | 17:45 | Diagnostic and postoperative evaluation: application of new imaging modalities
Vasilios Papastefanou (London - United Kingdom) |
| 8074 | 18:00 | Surgical removal and visual outcomes and complications of ERM
Tina Xirou (Athens - Greece) |

17:00-18:15 | RHODES 1

SIS

2330 - G/RV Developing eye drops: bench to bedside considerations

The eye is unique in that it is an organ that lends itself to local (topical) treatment. Often, however, there are barriers to developing a successful formulation, with good safety and tolerability profile and maximal effectivity. Here, experts will discuss the potential pitfalls and challenges of eye drop development in ophthalmology, addressing CMC, regulatory and clinical issues. Invited speakers are expert in their field with experience of translating their formulations and research to the clinic.

Chairmen: **Maria Francesca Cordeiro** (London - United Kingdom), **Ann Logan** (Birmingham - United Kingdom)

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|-------|-------|--|
| 8166* | 17:00 | Clinical translation of eye drops and complex drug products
Uday B. Kompella (Aurora - USA) |
| 8176* | 17:25 | The challenge of optimising topical ocular formulations
Clive Wilson (Glasgow - United Kingdom) |
| 8188* | 17:50 | Regulatory consideration: the differences between medical product and drug development
Leopold Schmetterer (Singapore - Singapore) |

17:00-18:15 | RHODES 2

SIS

2346 - PBP Therapeutic innovations

Thanks to technical advances and to translational efforts, therapies that have been evaluated at the preclinical stage since many years, have reached the clinical stage. Scientific hypotheses, that were raised from pre clinical models are validated by clinical evidence. In this symposium, we have selected some examples of translational researches in the field of ophthalmology, that have brought significant advances in the understanding of diseases and / or in Therapeutic potential. The speakers will give an overview of the field and a critical analysis of the novel therapeutic strategies they will present : The latest on viral gene therapy; The latest in non-viral gene therapy; siRNA for neuroprotection; Iron chelation and neuroprotection; RPE graft : where we are?; Corneal graft or corneal regeneration; Iron and retinal cell death

Chairmen: **Yvan Arsenijevic** (Lausanne - Switzerland), **Francine Behar-Cohen** (Paris - France)

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|-------|-------|---|
| 8190 | 17:00 | RPE tissue engineering based on human pluripotent stem cells for cell therapy
Karim Ben M'Barek (Corbeil-Essonnes - France) |
| 8207 | 17:12 | The latest on viral gene therapy
Yvan Arsenijevic (Lausanne - Switzerland) |
| 8211* | 17:24 | siRNA in neuroretinal disease: from dream to reality
Leonard A. Levin (Montreal - Canada) |
| 8233* | 17:36 | Ocular gene therapies in clinical practice: Viral vectors and non-viral alternatives
Francine Behar-Cohen (Paris - France) |
| 8236 | 17:48 | Iron and transferrin
Emilie Picard (Paris - France) |
| 8285 | 18:00 | Corneal graft ou corneal regeneration?
Jean-Louis Bourges (Paris - France) |

17:00-18:15 | RHODES 3

C

2315 - EOVS/RV Basic principles of state-of-the-art ophthalmic instrumentation

This course is aimed at providing an overview of the basic principles of various state-of-the-art retinal-imaging systems such as scanning laser ophthalmoscopy, optical coherence tomography, as well as adaptive optics, and discusses how such imaging can even serve as a window into brain mechanisms. The goal is to illuminate for the clinician and scientist the underlying optical concepts and principles of various devices, even when not familiar with the particular technology employed within the instrument, and to demonstrate its potential with applications beyond those of retinal disease diagnosis and follow-up.

Chairmen: **Rui Bernardes** (Coimbra - Portugal), **Kristina Irsch** (Paris - France)

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|------|-------|---|
| 5013 | 17:00 | Scanning laser ophthalmoscopy - Basic optical principles
Kristina Irsch (Paris - France) |
| 5014 | 17:15 | Optical coherence tomography - Basic optical principles
Kristina Irsch (Paris - France) |
| 5015 | 17:30 | Adaptive optics - Basic optical principles
Kristina Irsch (Paris - France) |
| 5017 | 17:45 | Optical coherence tomography - Machine learning
Rui Bernardes (Coimbra- Portugal) |
| 5018 | 18:00 | Retinal imaging - A window into brain mechanisms
Miguel Castelo Branco (Coimbra - Portugal) |

17:00-18:15 | RHODES 4

C

2269 - MBGE/LC Bioinformatics in eye development and disease

The identification of genes linked to eye development and defects is challenging. Advances in bioinformatics-based approaches such as high-throughput sequencing has led to its increased application for eye gene discovery. This course will cover the latest bioinformatics approaches in the application of this technology for identification of genes linked to various ocular disorders. It will address how its coupling with other approaches, such as chromatin-immunoprecipitation, allow the uncovering of transcriptional networks in the eye. Further, it will inform on how subtle, but key, changes in the cis-regulatory grammar control the fate of specific cells, namely photoreceptors and bipolar cells, in the retina. Finally, the course will cover approaches developed to meet the new challenges brought by this technology, such as parsing through the large amounts of data to prioritize candidate genes. Toward this goal, the development of the bioinformatics web-resource tool called iSyTE (Integrated Systems Tool for Eye gene discovery) and its use in identifying cataract-linked genes, and the ongoing efforts for extending this approach to the retina and the cornea, will be covered.

Chairmen: **Alice Davidson** (London - United Kingdom), **Salil Lachke** (Newark - USA)

- 5001* 17:00 Integrating exome and whole genome analysis with the human phenotype ontology for discovery of new genes in rare eye diseases
Nikolas Pontikos (London - United Kingdom)
- 5002 17:18 Analysis of transcription by ChIP-seq in the eye: Progress and challenges
Ales Cvekl (Bronx - USA)
- 5007 17:36 iSyTE: a web resource tool to expedite eye gene discovery
Salil Lachke (Newark - USA)
- 5024 17:54 The cis-regulatory logic of photoreceptors and bipolar cells
Joseph Corbo (Clayton - USA)

17:00-18:15 | GALLIENI 1&2

SIS

2289 - ACB/COS Proteomics and personalized medicine in eye research and ophthalmology

Proteomics a novel and powerful tool to detect novel biomarkers and drugable targets of the eye and eye diseases. It can be performed either by using non-invasive samples like tear fluid or tissue samples. Tear fluid samples reflects not only the state of ocular surface but also that of other ocular structures or systemic state of the human body. Ocular surfaces are exposed environmental factors, topical ophthalmic drugs and affected by various ocular and systemic diseases. Biopsies of ocular tissues are of course a targeted way to detect various biological processes involved in eye diseases. Inflammation, wound healing and angiogenesis are vital processes involved in the defense mechanisms of the human body and pathogenesis of many eye diseases. It is also one of the most important factors in many ocular surgeries e.g. corneal, vitreoretinal and glaucoma surgery. It consists of many overlapping processes like inflammation, angiogenesis, fibroblast activation, ECM production and remodeling of the ECM and there are many mechanisms and mediators involved in it. Proteomics is a powerful tool to diagnose and detect mechanisms and drugable targets of the ophthalmic and systemic diseases. SIS is focusing in the proteomics and biomarkers of the eye in relation to these diseases.

Chairmen: **Roger Wilmer Beuerman** (Singapore - Singapore), **Hannu Uusitalo** (Tampere - Finland)

- 8066 17:00 How does aging influence tear fluid proteomics
Janika Nättinen (Tampere - Finland)
- 8085 17:18 Proteomic approach to new drugable targets of retinal neovascularization
Maria Vähätupa (Tampere - Finland)
- 8160 17:36 Proteomics and personalized medicine in eye research and ophthalmology
Hannu Uusitalo (Tampere - Finland)
- 8321 17:54 Metabolomics or proteomics: which way to go?
Roger Wilmer Beuerman (Singapore - Singapore)



18:30-19:30 | RHODES 2



Industry Sponsored Symposium (see page 98)

Thursday
17 October 2019



08:30-09:45 | HERMES

SIS

2306 - RV/PBP Recent progress in OCT and OCT-angiography

OCT angiography (OCT-A) as a new non-invasive imaging technology that enables the monitoring of the macular retinal and choroidal circulation. OCT-A allows a detailed detection either of the macular retinal capillaries plexus as well as the subretinal choroidal neovascularisation. The correlation of OCT-A with OCT longitudinal or "en face" sections resulted to a better understanding of the pathologic features of the macular degenerative or vascular pathologies. OCT-A became a useful imaging modality in the evaluation and management of macular hemodynamic changes observed during the evolution of the retinal ischemic micronangiopathies, the treatment and follow up of the maculopathies related to a subretinal neovascularization, macular surgical pathologies and anterior segment vascular evaluation. The aim of the symposium is to organize an interactive discussion on the new imaging aspects for the detection and management of the most common maculopathies, as well as an interactive discussion of typical clinical cases.

Chairmen: **Constantin Pournaras** (Genève - Switzerland), **Leonidas Zografos** (Lausanne - Switzerland)

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|------|-------|--|
| 8082 | 08:30 | The spectrum of disorders related to pachychoroid: an EDI-OCT evaluation
Aude Ambresin (Lausanne - Switzerland) |
| 8135 | 08:45 | OCT in peripheral chorioretinal tumors and pseudo-tumors
Leonidas Zografos (Lausanne - Switzerland) |
| 8216 | 09:00 | OCT and OCT-A based management of vaso-occlusive retinal disorders. Present indications for the use of fluorescent angiography
Constantin Pournaras (Hirslanden - Switzerland) |
| 8267 | 09:15 | OCT and OCT-A in pediatric ocular oncology
Christina Stathopoulos (Lausanne - Switzerland) |
| 8316 | 09:30 | OCT and OCT - A based management of AMD. Present indications for the use of fluorescent angiography
Florence Coscas (Creteil - France) |

08:30-09:45 | RHODES 1

SIS

2279 - NSPH Autoantibodies and neuro-ophthalmic disease

Neuro-ophthalmology has increasingly moved from a descriptive definitions of disease to one in which pathogenetic mechanisms of disease can be identified. Autoantibodies have been identified in a variety of disorders. Some autoantibodies have an associated relationship, whilst others are clearly disease causing, leading to new frontiers in treatment options. This symposium will examine the clinical disorders associated with these antibodies, including anti-MOG, anti-NMO, anti-GAD, anti-neutrophil antibodies, and antibodies associated with paraneoplastic syndromes.

Chairmen: **Aki Kawasaki** (Lausanne - Switzerland), **Patrick Yu-Wai Man** (Cambridge - United Kingdom)

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|------|-------|---|
| 8052 | 08:30 | Anti-AQP4 and anti-MOG optic neuropathies
Patrick Yu-Wai-Man (Cambridge - United Kingdom) |
| 8055 | 08:48 | Paraneoplastic causes of vision loss
Rustum Karanjia (Ottawa - Canada) |
| 8126 | 09:06 | Autoantibodies and eye movement disorders
Matthieu Robert (Paris - France) |
| 8150 | 09:24 | ANCA-associated optic neuropathy
Aki Kawasaki (Lausanne - Switzerland) |

08:30-09:45 | RHODES 2

SIS

2337 - PO/RV Radiation retinopathy and maculopathy: clinical and biological perspectives

Retinal damage following irradiation is a challenge in the current management of eyes treated for intraocular tumors. Despite a well-described phenotype, especially using multimodal retinal imaging, and new high-resolution imaging techniques, mechanisms involved in radiation retinopathy/maculopathy remain non-elucidated, and therapeutic strategies are limited. To advance in the understanding of this sight-threatening complication, the development, validation and analysis of reproducible animal models of ocular irradiation are crucial. We will review concepts on potential mechanisms leading to ischemia after retinal irradiation. Molecular and cellular events leading to microvascular occlusion will be discussed, and current treatment strategies will be reviewed.

Chairmen: **Alexandre Matet** (Paris - France), **Michel Pâques** (Paris - France)

- | | | |
|------|-------|---|
| 8093 | 08:30 | High resolution imaging of radiation retinopathy
Michel Pâques (Paris - France) |
| 8128 | 08:48 | Animal models to study radiation retinopathy
Alexandre Matet (Paris - France) |
| 8147 | 09:06 | Radiation microangiopathy: new insights from clinical and imaging observations
Leonidas Zografos (Lausanne - Switzerland) |
| 8291 | 09:24 | Treatment approaches for radiation maculopathy and retinopathy
Aline Isabel Riechardt (Berlin - Germany) |

08:30-09:45 | RHODES 3

SIS

2273 - COS TFOS - Dry Eye Workshop II - What's New?

The Dry Eye Workshop (DEWS) II published its report in 2017. 150 experts for dry eye disease including clinicians and laboratory scientists from US, Asia and Europe discussed multiple aspects of dry eye disease in an evidence-based manner to reach a global consensus. Subcommittees included "definition and classification", "epidemiology", "sex, gender and hormones", "pathophysiology", "tear film", "diagnostics", "management and therapy" as well as "clinical study designs". "Iatrogenic dry eye" and "pain & sensation" were new topics in this second DEWS. Highlights of this workshop will be presented by European participants and specialists in the field.

Chairmen: **Elisabeth M. Messmer** (Munich - Germany), **Jutta Horwath-Winter** (Graz - Austria)

- | | | |
|-------|-------|---|
| 8101* | 08:30 | Definition and diagnosis of dry eye disease (DED)
Elisabeth M. Messmer (Munich - Germany) |
| 8132 | 08:45 | Sex, gender and hormones in dry eye disease
Piera Versura (Bologna - Italy) |
| 8031* | 09:00 | Pain and sensation in dry eye disease
Juana Gallar (San Juan de Alicante - Spain) |
| 8036 | 09:15 | Iatrogenic dry eye disease
Jutta Horwath-Winter (Graz - Austria) |
| 8058 | 09:30 | Treatment of dry eye disease
Christina Jacobi (Hamburg - Germany) |

08:30-09:45 | RHODES 4

JM

ARVO-EVER Symposium - Neuroprotection for retinal diseases

Chairmen: Francine Behar-Cohen (Paris - France), Kai Kaarniranta (Kuopio - Finland)

- 8302 08:30 NAD⁺/NADH precursor treatment protects against retinal degeneration
Jeffrey Boatright (Atlanta - USA)
- 8311 08:45 Neutrophils as an important pathophysiologic cellular component in the onset of AMD
Debasish Sinha (Pittsburg - USA)
- 8304* 09:00 Evaluation of glaglion cell death: implication for therapy
Maria Francesca Cordeiro (London - United Kingdom)
- 8312* 09:15 Where we stand with replacement and regeneration of blindness from optic neuropathy
Leonard Levin (Montreal - Canada)
- * 09:30 Bile acids as neuroprotectant for retinal detachment
Francine Behar-Cohen (Paris - France)

08:30-09:45 | GALLIENI 1&2

C

2316 - LC/COS Intraocular lens basics

The course aims at young ophthalmologists as well as experienced ophthalmologists as a refresher. The goal is to gain a better understanding of the different optical concepts and the calculation methods used in clinical practice. After a brief historical outline of the development of intraocular lenses, we go in detail on the basics of calculating modern lenses. Here, formula-based approaches are being discussed as well as raytracing based concepts. In the last section we introduce the different optical principles and lens concepts and we will discuss the advantages and disadvantages of various modern lenses.

Chairmen: Timo Eppig (Schnaittach - Germany), Achim Langenbacher (Homburg - Germany)

- 5022 08:30 IOL calculation concepts
Achim Langenbacher (Homburg - Germany)
- 5021* 08:55 History of the development of intraocular lenses
Timo Eppig (Schnaittach - Germany)
- 5023* 09:20 Optical concepts - monofocal, aspheric, toric, multifocal, EDOF
Hakan Kaymak (Düsseldorf - Germany)

09:45-10:10 | HERMES**KN****Keynote Lecture**

Introduced by Manuel Vidal Sanz

The London Project to cure blindness at 10 years: have we found a cure?

Pete Coffey (London - United Kingdom)

The London Project to Cure Blindness is a collaboration between Professor Pete Coffey and Dr Lyndon da Cruz from University College London and Moorfields Eye Hospital. The project aims to use Stem Cell technology to restore sight, prevent progression and ultimately improve the quality of life for patients with Age-Related Macular Degeneration (AMD) and other retinal and macular disorders, combining cutting edge knowledge and technology from the laboratory, clinic and operating theatre.

10:15-10:45 Coffee break - Exhibition Area**10:45-12:00 | HERMES****C****2323 - RV/IM Uveitis in clinical practice**

The participants will be updated on the current, evidence-based trends on diagnosis and management of certain challenging topics in uveitis. The objective of the course is to address common uveitis challenges which are presented through clinical cases. The current evidence and optimal approach on the diagnosis and management of certain uveitis controversies will be provided. In addition, flow charts and treatment algorithms will be presented at the end of each lecture. Finally, the audience will have the opportunity to interact with the speakers by answering multiple choice questions which will summarize the key points of each topic. At the conclusion of the course the attendee will be updated on the current, evidence-based trends on diagnosis and management of certain challenging topics in uveitis.

Chairmen: **Teifi James** (Halifax - United Kingdom), **Paris Tranos** (Thessaloniki - Greece)

5008	10:45	Clinical features of uveitis Paris Tranos (Thessaloniki - Greece)
5028*	11:00	Investigations of uveitis Teifi James (Halifax - United Kingdom)
5043	11:15	Dealing with the complications of uveitis Paris Tranos (Thessaloniki - Greece)
5029*	11:30	Recognising uveitis emergencies - how to avoid pitfalls Teifi James (Halifax - United Kingdom)
5040	11:45	Vitreoretinal complications of uveitis. The role of vitrectomy Athanasios Vakalis (Thessaloniki - Greece)

10:45-12:00 | RHODES 1

SIS

2312 - COS/G Cornea and glaucoma

This symposium aims to highlight topics of common interest for glaucoma and cornea physicians, providing up-to-date knowledge in complex, often controversial, diagnostic and therapeutic paradigms.

Chairmen: **Matthias C. Grieshaber** (Basel - Switzerland), **Zisis Gkatzoufas** (Basel - Switzerland)

- | | | |
|-------|-------|---|
| 8079 | 10:45 | Refractive surgery in glaucoma
Iraklis Vastardis (Dortmund - Germany) |
| 8121 | 11:03 | Anti-glaucomatous medication and ocular surface
Dimitrios Sakellaris (Thessaloniki - Greece) |
| 8162* | 11:21 | Post-keratoplasty glaucoma; current state of diagnosis and treatment
Gokulan Ratnarajan (East Grinstead - United Kingdom) |
| 8161 | 11:39 | IOP measurement and cornea: methods and limitations
Matthias C. Grieshaber (Basel - Switzerland) |

10:45-12:00 | RHODES 2

C

2327 - PO/MBGE Don't panic: Hitchhiker's guide to statistics

This course will widen your comfort zone in statistics. It highlights pearls not to be missed and pitfalls to be circumvented in using and interpreting the most common statistical methods and tests. Good science and evidence-based practice depends on accurate communication of research results and their correct interpretation by the readership. Because some authors do not seek statistical advice when planning and analysing their study and most journals do not submit their manuscripts to statistical review, the scientific reviewer is often responsible for spotting at least elementary deviations from good statistical practice. For many, this means stepping out of their comfort zone. The experience of the instructors as senior writers, reviewers and editorial board members is used to guide the participants into being more agile in the exciting field of statistical analysis whether they produce or peruse research. The items discussed are based on live examples from recent published literature.

Chairmen: **Tero Kivelä** (Helsinki - Finland), **Martine J. Jager** (Leiden - The Netherlands)

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|-------|-------|---|
| 5030* | 10:45 | Matching analysis with your study design
Tero Kivelä (Helsinki - Finland) |
| 5031* | 11:10 | Pearls and pitfalls
Tero Kivelä (Helsinki - Finland) |
| | 11:35 | How to set up your research and present it?
Martine J. Jager (Leiden - The Netherlands) |

10:45-12:00 | RHODES 3

SIS

2344 - G Risk factors and profiling in glaucoma: where do we stand?

This symposium aims to highlight topics of common interest for glaucoma and cornea physicians, providing up-to-date knowledge in complex, often controversial, diagnostic and therapeutic paradigms.

Chairmen: **Bettina Hohberger** (Erlangen - Germany), **Francesca Pasutto** (Erlangen - Germany)

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|------|-------|--|
| 8138 | 10:45 | Advanced in early- and adult-onset glaucoma genetics
Francesca Pasutto (Erlangen - Germany) |
| 8142 | 11:00 | 2000 years under pressure – the history of glaucoma research
Frank Krogmann (Vienna - Austria) |
| 8152 | 11:15 | Trace elements in glaucoma – the impact of analytics
Bernhard Michalke (Neuherberg - Germany) |
| 8169 | 11:30 | The retinal venous pressure- A new measurable parameter in glaucoma risk assessment
Richard Stodtmeister (Dresden - Germany) |
| 8255 | 11:45 | OCT-RNF and GCC in hereditary glaucoma
Oksana Vitovska (Kyiv - Ukraine) |

12:30-13:30 | RHODES 3

CIS

Lunchtime Industry Sponsored Symposium (see page 98)

10:45-12:00 | RHODES 4

SIS

2291 - MBGE/G Glaucoma - Genetics and Molecular Epidemiology

Glaucoma belongs to the common eye disease with a high prevalence among aged individuals, but it occurs also in children. Worldwide, it is the second-leading cause of blindness. Clinical and genetic diversity of glaucoma are the major challenges in understanding the underlying molecular mechanisms. The speakers will discuss these aspects from patients' point of view and demonstrate our current knowledge in clinical genetics and based upon genome-wide association studies.

Chairmen: **Christopher Hammond** (London - United Kingdom), **Robyn Jamieson** (Sydney - Australia)

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|------|-------|---|
| 8034 | 10:45 | Genomics and molecular mechanisms in glaucoma and anterior segment abnormalities
Robyn Jamieson (Sydney - Australia) |
| 8134 | 11:35 | Glaucoma genetics: can we predict who will get glaucoma, and response to treatment?
Christopher Hammond (London - United Kingdom) |

10:45-12:00 | GALLIENI 1&2

SIS

2335 - PBP Inherited and acquired retinal degenerations: degeneration and rescue

Retinal degenerations are a main cause of blindness, whether they are inherited or acquired. The long-term consequences of retinal degeneration over the main output population of retinal neurons, retinal ganglion cells, will be reviewed. The advancement of image technologies has allowed to study the main features of retinal degeneration associated with Parkinson's disease, and these will be presented. Functional examination of the retina will discuss the main features associated with progressive stages in various models of inherited retinal degeneration. The main features of a characterized acquired retinal degeneration induced by the lack of Taurine will be presented. Finally, attempts to rescue inherited retinal degenerations using cell transplantation in to the retina will be examined. The Symposium will give and update of these studies and will provide ample opportunity for interaction among the scientific community attending the conferences.

Chairmen: **Manuel Vidal-Sanz** (Murcia - Spain), **Maria-Paz Villegas-Pérez** (Murcia - Spain)

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|-------|-------|---|
| 8095 | 10:45 | Long-term effects of inherited and acquired retinal degenerations on the retinal ganglion cell population
Maria-Paz Villegas-Pérez (Murcia - Spain) |
| 8206 | 11:00 | Retinal degeneration in Parkinson's disease
Nicolás Cuenca (Alicante - Spain) |
| 0046* | 11:15 | Visual restoration by an infrared photovoltaic implant and by optogenetic therapy: Preclinical validation in non-human primates
Serge Picaud (Paris - France) |
| 8231 | 11:30 | Retinal function in photoreceptor degenerations
Pedro De La Villa (Alcala De Henares - Spain) |
| 8019 | 11:45 | The London Project at 10 years: have we found a cure?
Pete Coffey (London - United Kingdom) |

12:00-12:25 | HERMES

PS European Ophthalmology Heritage Lecture

Introduced by Alain Bron

Contribution of French ophthalmologists
Gisèle Soubrane (Paris - France)

In France, ophthalmology was an essential part of medicine in the Gallo-Roman period ascertained by the oculist stamps. During the Middle-Ages, couching of the cataractous lens was the only method and this was performed by barber-surgeons. Ambroise Paré, a military surgeon, considered a pioneer in surgical technics, conceived an artificial eye. His followers opened the way to Daviel who initiated cataract extraction and designed the adapted instruments in the early XVIII th century, the century of surgery. The XVII th century witnessed the development of optics with Descartes. Later, Monoyer and Parinaud designed far and reading scales still used to day. Haüy and Braille took care of the education and created an alphabet for the blind. Meanwhile the introduction of the microscope allowed the description for example of Descemet membrane, Cloquet's canal, Tenon's capsule. In the field of retina the introduction of the ophthalmoscope, increased tremendously the level of precision in diagnosis and treatment of ophthalmologic conditions. Giraud Teulon conceived the first binocular indirect ophthalmoscope that will become popular one century later with Schepens. Bonnet-Blanc -Dechaume described the arterio venous communications 6 years before Wyburn-Mason. After Vienna and Berlin, Paris became a center of excellence in ophthalmology attracting numerous students.

13:30-14:45 | HERMES

SIS 2304 - COS Limbal stem cell transplantation

This symposium aims to provide the current state of limbal stem cell transplantation, highlight recent advances in the field and explore future perspectives.

Chairmen: **Thomas Armin Fuchsluger** (Rostock - Germany), **Zisis Gkatzoufas** (Basel - Switzerland)

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|-------|-------|---|
| 8049 | 13:30 | Cultivated oral mucosal epithelial transplantation
Zisis Gkatzoufas (Basel - Switzerland) |
| 8148 | 13:45 | Histological aspects of limbal stem cell transplantation
Andreas Giebl (Erlangen - Germany) |
| 8164 | 14:00 | CLET - Cultivated limbal epithelium transplantation
Dariusz Dobrowolski (Katowice - Poland) |
| 8294* | 14:15 | Limbal stem cell transplantation
Thomas Armin Fuchsluger (Rostock - Germany) |
| 8125 | 14:30 | Limbal stem cell transplantation and keratoprosthesis
Sarah Moussa (Austria) |

13:30-14:45 | RHODES 1

SIS

2321 - G Artificial intelligence: technology, opportunities and current trend

Artificial intelligence is the long expected automated tool for the clinician to assist them in a very fast and precise manner to diagnose and treat ocular diseases. The need for AI in ophthalmology (or healthcare) is surged from the scarcity of the doctors especially the specialists and subspecialists in countries in development, the increasing life expectancy, the need for preventive healthcare and the obligation to maintain an affordable health economics. In this SIS we try to explain the AI by basic and advanced machine learning, big data analyzing, deep learning, its ethical boundaries, the opportunities in healthcare/ophthalmology and the role of the ophthalmologist.

Chairman: Sayeh Pourjavan (Zaventem - Belgium)

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|-------|-------|---|
| 8214 | 13:30 | Definitions: machine learning, deep learning and AI understanding
Sayeh Pourjavan (Brussels - Belgium) |
| 8189* | 13:55 | AI opportunities and challenges
Leopold Schmetterer (Singapore - Singapore) |
| 8262 | 14:20 | Artificial intelligence in glaucoma: assisted diagnosis and risk assessment
Patrick De Boever (Diepenbeek - Belgium) |

13:30-14:45 | RHODES 2

SIS

2325 - IM in conjunction with the Sociedad Española de Inflammaci3n Ocular (SEIOC) Know your bug, fight your enemy: practical guide for infectious disease

The SIS will present a tailored methodology to the most advanced approach on assessing and managing the infectious uveitis. The presentations will address the topic starting from the basic concepts on infectious uveitis towards the practical approach for the optimization of diagnostic and therapeutic process.

Chairman: Franois Willermain (Bruxelles - Belgium)

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|-------|-------|--|
| | 13:30 | Tuberculosis uveitis in non endemic country
Franois Willermain (Bruxelles - Belgium) |
| 8275* | 13:55 | Herpetic retinitis... Who is the guilty one?
Ester Carreño (Madrid - Spain) |
| 8277* | 14:20 | Beware the cat! Toxoplasma & co
Ester Carreño (Madrid - Spain) |

13:30-14:45 | RHODES 3

SIS

2317 - RV/NSPH Pediatric retinal diseases update

Pediatric Retinal Diseases refer to a wide group of diseases that may be genetically determined. Clinically there is a large spectrum of findings with a specific imaging. Our understanding of retina phenotype has improved with new techniques of posterior segment imaging and early genotype-phenotype correlations. Recent advances in correlation imaging phenotype help us for a better understanding of the pediatric retinal diseases. An overview of the innovating diagnosis, imaging and treatment is summarized.

Chairmen: **Dominique Bremond-Gignac** (Paris - France), **Alejandra Daruich-Matet** (Paris - France)

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|------|-------|--|
| 8004 | 13:30 | Pediatric OVCR what's new?
Dominique Bremond-Gignac (Paris - France) |
| 8069 | 13:48 | Pediatric retina imaging in aniridia
Alejandra Daruich-Matet (Paris - France) |
| 8242 | 14:06 | OCT- angiography in pediatric diseases: new insights
Huban Atilla (Ankara - Turkey) |
| 8323 | 14:24 | Nystagmus videoocular movements recording in children with retinal diseases
Matthieu Robert (Paris - France) |

13:30-14:45 | RHODES 4

SIS

2288 - MBGE/LC Radiation-induced cataracts

Based upon epidemiological studies, the limit for the allowed dose of ionizing radiation to the lens has been reduced to 20 mSv/year. However, the mechanisms of low dose radiation cataract induction are still unclear. The SIS will discuss the epidemiological background leading to the decreased dose limit and recent findings in mice discussing how genetic background and age of irradiation might influence cataract development after radiation exposure. The speakers will demonstrate various mouse models as well as cellular studies in investigating the mechanistic chain of events from the initial radiation insult and biological responses through to formation of lens opacities.

Chairmen: **Nobuyuki Hamada** (Tokyo - Japan), **Roy Quinlan** (Durham - United Kingdom)

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|------|-------|--|
| 8060 | 13:30 | An update on effects of ionizing radiation exposure on the eye
Nobuyuki Hamada (Tokyo - Japan) |
| 8059 | 13:48 | Changes in cell density as an early marker for low dose ionising radiation- induced cataractogenesis
Alice Uwineza (Durham - United Kingdom) |
| 8115 | 14:06 | Cataract type in mouse exposed to moderate doses of ionizing radiation depends on mouse age at irradiation
Daniel Pawliczek (Munich - Germany) |
| 8123 | 14:24 | The concept of cataratogenic load to understand ageing and radiation-induced damage to the lens
Roy Quinlan (Durham - United Kingdom) |

13:30-14:45 | GALLIENI 1&2

C

2285 - YOS Session/G How to write, publish and get your research known!

Chairmen: João Barbosa Breda (Porto - Portugal), Danijela Mrazovac (Zagreb - Croatia)

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|-------|-------|--|
| 5035 | 13:30 | Tips and tricks on how to plan a good study
Ines Lains (Boston - USA) |
| 5036 | 13:40 | Tips and tricks on how to write a good scientific paper
Francesco Oddone (Rome - Italy) |
| 5039* | 13:50 | Things to think about before choosing and submitting to a scientific journal
Einar Stefansson (Reykjavik - Iceland) |
| 5037 | 14:00 | How to get your research known by your peers!
João Barbosa Breda (Porto - Portugal) |
| | 14:10 | Motivational talk
Ines Lains (Boston - USA) |
| | 14:17 | THEA Trophy Session
Caroline Wilde, Yevgeniya Atiskova, Giuseppe Giannaccare |

14:45-15:45 Coffee break - Exhibition Area

14:45-15:45 | POSTER AREA

SOC

Coffee with Profs - Part 2

In an initiative to encourage dialogue amongst speakers and EVER members, we have organised a session called "Coffee with Profs". This will be a table of 6-8 "guests" at a table headed by one of the EVER speakers.

Maria Francesca Cordeiro
Gordana Sunaric Mégevand
Manuel Vidal Sanz

The idea is to provide a casual yet personal venue where colleagues, in particular the younger faction, can share comments and ideas with an expert.

BM

Section Business Meetings

15:45-16:15

ACB	→	GALLIENI 1&2
COS	→	RHODES 2
EOVS	→	RHODES 1
G	→	RHODES 1
IM	→	RHODES 4
LC	→	HERMES
MBG	→	RHODES 4
NSPH	→	RHODES 2
PBP	→	RHODES 3
PO	→	RHODES 3
RV	→	HERMES

Friday
18 October 2019

16:15-17:30 | HERMES

SIS

2298 - IM IM-SIS in conjunction with the Sociedad Española de Inflamación Ocular (SEIOC) - Tips and Tricks on how to survive in the jungle of biologic therapies

The SIS will present a tailored methodology to the most advanced approach in the biological therapy of non-infectious uveitis. The presentations will address the topic starting from the basic concepts on ocular immunology towards the practical approach for the optimization of non-infectious uveitis treatment in order to achieve an ideal outcome.

Chairman: **François Willermain** (Bruxelles - Belgium)

- 16:15 Tailoring biologic treatment for non-infectious uveitis: a transcriptomic approach and not role of non anti TNF biologics in adult uveitis patients
François Willermain (Bruxelles - Belgium)
- 8273* 16:40 How to properly assess a patient for biologic therapy
Ester Carreño (Madrid - Spain)
- 8274* 17:05 Beyond anti-TNF-alpha therapy. New perspectives and preliminary clinical experience
Ester Carreño (Madrid - Spain)

16:15-17:30 | RHODES 1

SIS

2292 - COS Modern management of neurotrophic keratopathy

Neurotrophic Keratopathy (NK) refers to a condition where corneal epitheliopathy leading to frank epithelial defect with or without stromal ulceration (melting) is associated with reduced or absent corneal sensations. Sensory nerves serve nociceptor and trophic functions, which can be affected independently or simultaneously. Many systemic and ocular conditions, including surgery and preserved medications can lead to NK. NK can be mild (epithelium and tear film changes), moderate (non-healing epithelial defect) or severe (stromal melting and perforation). Medical management with lubricating agents from artificial tears to serum/plasma drops, anti-inflammatory agents, antibiotics and anti-proteases all provide non-specific relief, which may be temporary. Contact lenses, punctal plugs, lid closure with botulinum toxin and surgical interventions like tarsorrhaphy, conjunctival flaps and amniotic membrane provide greater success but often at the cost of obscuring sight. Corneal surgery in a dry ocular surface with reduced sensation is at high risk of failure. Recombinant nerve growth factor (cenegermin), recently approved for human use targets the nerve pathology and has the potential of addressing the underlying deficit. MT8 – a non-peptidic nerve growth factor mimetic might be the new star on the horizon becoming a second specific therapy for NK.

Chairmen: **Juana Gallar** (San Juan De Alicante - Spain), **Berthold Seitz** (Homburg - Germany)

- 8039 16:15 Neurotrophic keratitis as a peripheral sensory neurodegenerative disease
Adolfo Aracil Marco (San Juan De Alicante - Spain)
- 8102* 16:33 Neurotrophic keratopathy - Diagnosis and clinical presentations
Elisabeth M. Messmer (Munich - Germany)
- 8165* 16:51 Medical management of neurotrophic keratopathy
Harminder Dua (Nottingham - United Kingdom)
- 8157 17:09 Surgical management of neurotrophic keratopathy
Alex Shortt (London - United Kingdom)

16:15-17:30 | RHODES 2

SIS

2334 - RV/LC Uveitis: Surgical treatment of intraocular complication

Uveitis is a range of complex eye conditions usually associated with certain systemic conditions. The big variety of intraocular complications can influence the visual function. This session will be dedicated to the surgical treatment of intraocular complications of Uveitis. The stress will be made on treatment of uveitic cataract, secondary hypertension, vitreous opacifications and epiretinal membranes. As the idea of this particular SIS is to make it interesting not only for clinicians but also the basic science specialist we will include one basic science presentation about etiology of Uveitis.

Chairmen: **Katharina Krepler** (Vienna - Austria), **Lyubomyr Lytvynchuk** (Giessen - Germany)

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|------|-------|--|
| 8096 | 16:15 | Autoinflammatory uveitis
Vicente Chaques-Alepuz (Valencia - Spain) |
| 8098 | 16:27 | Tear proteome in uveitis
Jon Roger Eidet (Oslo - Norway) |
| 8089 | 16:39 | Cataract surgery in patients with uveitis
Andrzej Grzybowski (Olsztyn - Poland) |
| 8245 | 16:51 | Bag-in-the-lens cataract surgery in patients with uveitis
Luc Van Os (Edegem - Belgium) |
| 8072 | 17:03 | The role of vitrectomy in uveitis
Katharina Krepler (Vienna - Austria) |
| 8077 | 17:15 | Posterior uveitis: vitrectomy on eyes with bag-in-the-lens IOL
Summary and discussion
Lyubomyr Lytvynchuk (Giessen - Germany) |

16:15-17:30 | RHODES 3


OOG 2 Intraocular Tumors

Chairmen: **Doris Hadjistilianou** (Siena - Italy), **Tero Kivelä** (Helsinki - Finland)

- 5372 16:15 The role of magnetic resonance imaging in diagnosis of uveal melanoma
Rita Serras-Pereira, **Teresa Morais**, **Luísa Vieira**, **Carlos Batalha**, **Joana Ramalho**, **Ana Duarte**, **Ana Magriço** (Lisbon - Portugal)
- 5099 16:21 Proton beam treatment for choroidal melanoma at the National Center for Oncological Hadrontherapy - CNAO - in Pavia Italy; preliminary reports
Carlo Mosci, **Paolo Ligorio** (Genoa - Italy)
- 5219 16:27 Nation-wide survival outcomes of metastatic uveal melanoma with best supportive care
Elna Rantala, **Micaela Hernberg***, **Tero Kivelä** (Helsinki - Finland)
- 5440 16:33 Vasoproliferative retinal tumors in children and adults
Doris Hadjistilianou¹, **Sonia De Francesco**¹, **Cristina Menicacci**¹, **Matteo Barchitta**¹, **Giulia Esposti**¹, **Yuri Serov**² (¹Siena - Italy, ²Moscow - Russia)
- 5250 16:39 Retinal hemangioblastomas in Von Hippel-Lindau germline mutation carriers: progression, complications and treatment outcome
Anass Hajjaj, **Koen van Overdam**, **Rogier Oldenburg**, **Anna Koopmans**, **Ans van den Ouweland**, **Erwin Brosens**, **Annelies de Klein**, **Emine Kiliç** (Rotterdam - The Netherlands)
- 5268 16:45 Ocular manifestations of testicular lymphoma
Abigail Hopkins¹, **Archana Airody**², **Richard Gale**² (¹Macclesfield - United Kingdom, ²York - United Kingdom)

16:15-17:30 | RHODES 4

SIS

2270 - MBGE European Reference Network dedicated to Rare Eye Diseases

European Reference Networks (ERNs) involve Reference Centres across Europe with high level of expertise in the field of rare and low prevalent complex disorders. The aim of the SIS is to introduce the aims and scopes of the European Reference Network tackling rare ocular conditions (ERN-EYE). Set up under the EU Directive on Patients' Rights in Healthcare (2011/24/EU) ERN-EYE brings together 29 healthcare providers from 13 European countries. General information about the network will be given followed by the introduction of customized web-based application created to discuss real patient cases - Clinical Patient Management System. Last part of the SIS will be devoted to practical examples of work with patient groups, development of research ideas and guidelines.

Chairman: **Petra Liskova** (Prague - Czech Republic)

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|------|-------|---|
| 8184 | 16:15 | The aims and scopes of the ERN-EYE
Petra Liskova (Prague - Czech Republic) |
| 8178 | 16:40 | Aniridia- an example of multidisciplinary approach for research, collaboration and guidelines development
Dominique Bremond-Gignac (Paris - France) |
| 8185 | 17:05 | EyeClin - Customized clinical patient management system dedicated to rare eye diseases
Dorothee Leroux (Strasbourg - France) |

16:15-17:30 | GALLIENI 1&2

SIS

2311 - PBP Prospects in retinal drug development

The aim of this session to highlight selected new developments in retinal drug development, including discovery of new retinal regenerative drugs, aspects of targeted drug delivery to the retina, and modeling tools for quantitative understanding of posterior segment pharmacokinetics and pharmacodynamics.

Chairman: **Arto Urtti** (Kuopio - Finland)

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|-------|-------|---|
| 8308* | 16:15 | Targeting cGMP - signalling to protect photoreceptors in hereditary retinal degeneration
François Paquet-Durand (Tuebingen - Germany) |
| 8309 | 16:40 | Ex vivo bovine retinal models to study intravitreal mobility and inner limiting membrane penetration of nanomedicines
Katrien Remaut (Gent - Belgium) |
| 8310* | 17:05 | Pharmacokinetics of retinal drug delivery
Arto Urtti (Kuopio - Finland) |

17:30-17:55 | HERMES

KN

Keynote Lecture

Introduced by Steffen Heegaard

Molecular diagnostics and ophthalmic pathology: where are we up to?
Sarah Coupland (Liverpool - United Kingdom)



Surgical pathology is rapidly developing and evolving, with the incorporation of new technologies, which enable the pathologist to provide more accurate diagnoses as well as additional information that is important for treatment choices, response prediction and prognostication. The newer technologies encompass molecular pathology, digital pathology, as well as artificial intelligence, and can be applied on both tissue and liquid samples. Molecular pathology includes the application of a wide range of 'omics – i.e. genomics, transcriptomics, proteomics, metabolomics etc. Multicentre collaborations have enabled the sequencing of the human genome, the development of the human protein atlas and the human metabolome database. These projects provide the basis of designing new molecular panels and tests to be used in routine pathology. In this lecture, I will take you through how molecular diagnostics have fast-tracked ophthalmic pathology into an exciting new era of improved personalised medicine, and have enabled a better understanding of the pathogenesis of eye diseases – particularly eye tumours – and this, in turn, has allowed for the development of targeted treatments.

18:00-19:15 | HERMES

SIS

2277 - PBP/RV OCT angiography - can we quantify data?

Optical coherence tomography angiography (OCTA) is an emerging technology that allows for the non-invasive imaging of the ocular microvasculature. It is the first functional extension of OCT and has attracted considerable interest. One potential application of the technology is to extract quantitative parameters of ocular perfusion. Quantifying blood flow based on OCTA is, however, not an easy task. In this symposium, the technical and clinical aspects of OCTA imaging will be discussed. An understanding of the basic principles and limitations of OCTA technology will be provided. Approaches to extract quantitative perfusion parameters based on OCTA will be introduced. Their potential application to study retinal perfusion abnormalities will be shown in cases of systemic disease and glaucoma. Finally, the opportunities to study blood flow regulation will be presented.

Chairmen: **Jacqueline Chua** (Singapore - Singapore), **Gerhard Garhöfer** (Vienna - Austria)

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|-------|-------|---|
| 8100* | 18:00 | OCT angiography - a new tool to assess vascular autoregulation in the retina
Gerhard Garhöfer (Vienna - Austria) |
| 8186* | 18:18 | Approaches for quantification of OCT Angiography data
Leopold Schmetterer (Singapore - Singapore) |
| 8187 | 18:36 | Impact of systemic hypertension on retinal and choroidal microvasculature using OCT Angiography
Jacqueline Chua (Singapore - Singapore) |
| 8299 | 18:54 | Can we quantify data on AngioOCT
João Barbosa Breda (Porto - Portugal) |

18:00-19:15 | RHODES 1

SIS

2263 - MBGE Gene regulation in eye development and disease

This SIS will cover studies of transcriptional regulation in all major ocular tissues and will link these studies to cataract, glaucoma, and retinal degenerations. State-of-art methods, including RNA-seq, CHIP-seq, ATAC-seq, RNA FISH, and genome editing by CRISPR-Cas9 will be discussed. Studies of eye development are driven by dissecting the critical roles of specific DNA-binding transcription factors and regulation of their activities by extracellular signaling in specific compartments of the eye. Organization of gene regulatory networks that govern vertebrate eye development will be also presented. Critical gaps and novel research opportunities in our understanding of gene function during normal and abnormal eye development will be summarized and discussed in the context of understanding of ocular cell and tissue homeostasis. Collectively, these proposed presentations will add novel insights into understanding of eye development, regenerative potential of multiple ocular tissues, and rational design of therapies to prevent and/or delay onset of age-related eye diseases.

Chairmen: **Ales Cvekl** (Bronx - USA), **Zbynek Kozmik** (Praha - Czech Republic)

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|------|-------|--|
| 8018 | 18:00 | Chromatin dynamics, DNA-binding transcription factors and lens differentiation
Ales Cvekl (New York - USA) |
| 8119 | 18:36 | Roles of LIM homeodomain 2 (Lhx2) in the differentiation of mammalian retinal pigmented epithelium
Ruth Ashery-Padan (Tel Aviv - Israel) |
| 8144 | 18:54 | The role of Wnt/ β -catenin signaling pathway in lens and retina development
Zbynek Kozmik (Prague - Czech Republic) |

18:00-19:15 | RHODES 2

SIS

2333 - G Tackling non compliance

Non-compliance is a major factor of poor control of glaucoma eye disease. There are many reasons for this and in this special interest symposium; we will be discussing how to tackle this chronic problem, offering the patients and clinicians various solutions that can stabilise the eye disease, control glaucoma and to ultimately better quality of life. One of those options is using alternative therapy in the form of laser treatment. There are different forms of laser modalities that can be used (SLT, MDLT, ECP, TSC). These can be used as a stand-alone treatment or in combination with others to reduce or eliminate the need for topical drops. We will discuss how to select the appropriate laser for the patient, risks, benefits and safety profiles.

Chairmen: **Sally Ameen** (London - United Kingdom), **Philip Bloom** (London - United Kingdom)

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|-------|-------|--|
| 8110 | 18:00 | Laser it!
Sally Ameen (London - United Kingdom) |
| 8114 | 18:18 | Phaco it
Alastair Porteous (London - United Kingdom) |
| 8146 | 18:36 | Question it
Dimitrios Besinis (Athens - Greece) |
| 8280* | 18:54 | App it!
Faisal Ahmed (London - United Kingdom) |

18:00-19:15 | RHODES 3



Rapid Fire 1 - RV

Chairmen: Francine Behar-Cohen (Paris - France), Andrzej Grzybowski (Olsztyn - Poland)

- 5212 18:00 Subthreshold laser compared to spironolactone in treatment of chronic central serous retinopathy
Stefano Mercuri, Paolo Corazza, Nancy Khairat, Saad Younis (London - United Kingdom)
- 5122 18:06 Fluocinolone acetonide for the treatment of chronic diabetic macular edema: an Italian real-world experience
Piero Zollet, Luigi Capone, Rosangela Lattanzio, Francesco Bandello (Milan - Italy)
- 5094 18:12 Efficacy and safety of resvega in diabetic macular edema: preliminary results of a pilot study
Irini Chatziralli, Eleni Dimitriou, Alexandros Chatzirallis, Evaggelia Aissopou, Panagiotis Theodossiadis (Athens - Greece)
- 5391 18:18 Automatic classification and triage of diabetic retinopathy from retinal images based on a convolutional neural networks (CNN) method
Adrian Galdran¹, Hadi Chakor², Abdulaziz A. Alrushood³, Ryad Kobbi², Argyrios Christodoulidis², Jihed Chelbi², Marc-André Racine², Ismail Benayed¹ (¹Montreal - Canada, ²Brossard - Canada, ³Dammam - Saudi Arabia)
- 5428 18:24 Do macular OCT-A measures correlate with functional outcomes in diabetic patients?
Georgios Bontzos, Christina Garnavou-Xirou, Tina Xirou, Ilias Gkizis, Stamatina Kabanarou, Irini Chatziralli (Athens - Greece)
- 5312 18:30 Treatment of macular holes with topical drop regimen
Dimitra Skondra (Chicago - USA)
- 5369 18:36 In situ forming hydrogel for sustained intraocular drug delivery
Blessing C. Ilochonwu^{1*}, Marko Mihajlovic¹, Miao Tang², Mei Chen², Wim E. Hennink¹, Tina Vermonden¹ (¹Utrecht - The Netherlands, ²Belfast - United Kingdom)
- 5143 18:42 Age-related changes in flicker sensitivity with rod- and cone-enhanced stimuli
Amithavikram R. Hathibelagal¹, Shrikant R. Bharadwaj¹, Ahalya Subramanian², James Sadler³, John L. Barbur^{2*} (¹Hyderabad - India, ²London - United Kingdom, ³Hampshire - United Kingdom)
- 5177 18:48 Retinal neurodegeneration in systemic Lupus erythematosus: layer by layer retinal study using optical coherence tomography
Arnaldo Dias-Santos¹, Joana Ferreira¹, Sofia Pinheiro¹, João Paulo Cunha¹, Marta Alves¹, Ana Luísa Papoila¹, Maria Francisca Moraes-Fontes¹, Rui Proença² (¹Lisbon - Portugal, ²Coimbra - Portugal)

18:00-19:15 | RHODES 4**SIS****2339 - COS/ACB Update in Translational Research in Cornea & Ocular Surface**Chairmen: **Thomas Armin Fuchsluger** (Rostock - Germany), **Rajiv R. Mohan** (Columbia - USA)

- 8307* 18:00 Nerve regeneration in Liquid cornea patches
May Griffith (Montreal - Canada)
- 8032* 18:15 Targeting ion channels to treat corneal neuropathic pain and dry eye
Juana Gallar (San Juan de Alicante - Spain)
- 8248 18:30 Corneal transparency restoration by gene therapy
Rajiv R. Mohan (Columbia - USA)
- 8295* 18:45 Cold plasma - A novel approach to treat therapy-resistant corneal infections
Thomas Armin Fuchsluger (Rostock - Germany)
- 8301 19:00 Corneal endothelial cell-matrix interactions in Fuchs corneal endothelial dystrophy
Isabelle Brunette (Montreal - Canada)

18:00-19:15 | GALLIENI 1&2**JM****SOCIETY SIGS 2342 - GOA/NSPH Update on severe allergic conjunctivitis**Chairmen: **Dominique Bremond-Gignac** (Paris - France), **Steffen Heegaard** (Copenhagen - Denmark)

- 8103 18:00 Topical ciclosporine: new clinical insight
Dominique Bremond-Gignac (Paris - France)
- 8177 18:18 Biotherapies and ocular surface
Serge Doan (Paris - France)
- 8180 18:36 Fungal involvement (Pityrosporum) in ocular allergy
Habib Chabane (Paris - France)
- 8276 18:54 Filaggrin marker in ocular allergy
Steffen Heegaard (Copenhagen - Denmark)

**19:15-19:45 | HERMES
EVER GENERAL ASSEMBLY**

08:30-09:45 | HERMES

SIS

2296 - NSPH A glance at the library of history

History is cyclical. Egyptians and Greeks are known to have been in contact already in the 2nd millennium BC. The idea of a universal library seems to have been proposed by Demetrius Phalerm, an exiled Athenian statesman living in Alexandria, Egypt. Because of its Great Library this city became the capitol of knowledge and learning during the 3rd and 2nd centuries BC. The rich lands of Egypt became the property of Rome after the death of Cleopatra VII in 30 BC, which spelled the end of the Ptolemaic dynasty that had ruled Egypt since the death of Alexander the Great in 323 BC. We will take a look of five topics providing a fascinating travel along the History –from Antiquity and Middle Ages to the last century– of ocular disorders and ophthalmological concepts such as cataracts, myopia, or Optics.

Chairmen: **Francisco Javier Ascaso** (Zaragoza - Spain), **Andrzej Grzybowski** (Olsztyn - Poland)

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|-------|-------|--|
| 8054* | 08:30 | A rational explanation of some miracles of Christ healing blindness
Francisco Javier Ascaso (Zaragoza - Spain) |
| 8087 | 08:42 | History of concepts of myopia pathogenesis and treatment
Andrzej Grzybowski (Olsztyn - Poland) |
| 8116 | 08:54 | Witelo and his works on optics
Agnieszka Polak (Lublin - Poland) |
| 8198 | 09:06 | Professor Dr. Reimond Speleers, the sad story of the man of Katyn
Edward De Sutter (Kortrijk - Belgium) |
| 8204 | 09:18 | The Franceschetti Memorial Library
Albert Franceschetti (Geneva - Switzerland) |
| 8270 | 09:30 | Optics: the various speeds of lights 1
Harry Mark (North Haven - USA) |

08:30-09:45 | RHODES 1

SIS

2275- MBGE New perspectives on gene-directed ophthalmic therapies

This SIS aims to provide current and novel insights into gene-directed therapies being developed for a range of inherited ophthalmic diseases. The application of antisense oligonucleotide (ASO) treatments, gene-editing, viral gene therapies and translational readthrough-inducing drugs will all be discussed in a variety of disease-specific contexts. Specifically, the use of induced pluripotent stem-derived RPE cells to model and test a range of bestrophinopathy potential therapies will be presented. Focus will also be given to the surgical challenges associated with retinal gene therapy and a review of the recent ASO clinical trial for CEP290-related Leber Congenital Amaurosis.

Chairmen: **Alice Davidson** (London - United Kingdom), **Petra Liskova** (Prague - Czech Republic)

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|-------|-------|---|
| 8105 | 08:30 | Novel therapies for bestrophinopathies
Amanda-Jayne Carr (London - United Kingdom) |
| 8118* | 08:55 | Surgical challenges with retinal gene therapy
M. Dominik Fischer (Tuebingen - Germany) |
| 8296 | 09:20 | Antisense oligonucleotide treatment in CEP290-related leber congenital amaurosis
Bart Peter Leroy (Ghent - Belgium) |

08:30-09:45 | RHODES 2

SIS

2281 - COS/PO Ocular signs of monoclonal gammopathy

Monoclonal gammopathy of undetermined significance (MGUS), solitary bone plasmacytoma, Waldenström's disease (macroglobulinaemia) and symptomatic or asymptomatic multiple myeloma are all different stages of the same disease, all with monoclonal gammopathy. Corneal opacifications (paraproteinemic keratopathy) in monoclonal gammopathy have been described in about 70 patients in the literature. These may be nummular or crystal-like, or even present with white or grey line-forming depositions in the stroma. Patients with lymphoproliferative disease may also present with uveitis, maculopathy, central retinal artery or vein occlusion. Our symposium summarizes lymphoproliferative diseases with monoclonal gammopathy, possible immunoglobulin deposition in different organs, clinical signs of paraproteinemic keratopathy and significance of ocular signs of monoclonal gammopathy.

Chairmen: **Walter Lisch** (Bruchkoebel - Germany), **Nora Szentmary** (Budapest - Hungary)

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|------|-------|---|
| 8076 | 08:30 | Diagnosis of haematological diseases with monoclonal gammopathy
Gabor Mikala (Budapest - Hungary) |
| 8155 | 08:45 | Immunoglobulin depositions in different organs in monoclonal gammopathy
Laurent Garderet (Paris - France) |
| 8057 | 09:00 | Haematological diseases with monoclonal gammopathy treatment
Artur Jurczynszyn (Cracow - Poland) |
| 8156 | 09:15 | Clinical signs of paraproteinemic keratopathy
Walter Lisch (Bruchkoebel - Germany) |
| 8056 | 09:30 | Significance of ocular signs of monoclonal gammopathy
Nora Szentmary (Budapest - Hungary) |

08:30-09:45 | RHODES 3

SIS

2320 - COS/PBP Update on keratoconus diagnosis and treatment

The diagnosis of keratoconus has changed revolutionarily during the past years. With the appearance of 3D corneal tomography and OCT devices even subclinical forms of the disease can be detected. Similarly, a wide range of interventions has been introduced in the treatment modalities as well. Earlier, nearly only rigid gas permeable contact lens and penetrating keratoplasty were the solutions. Nowadays, either conventional epithelium-off or epithelium-on collagen cross-linking (CXL) treatment targets the cause of the disease. Intracorneal ring segments, toric IOLs, and keratorefractive procedures are also available sometimes in combination with CXL to treat certain forms of the disease. Surgical treatment shifted to deep anterior lamellar keratoplasty, which preserves the integrity of the globe. Postoperative immune rejection is less frequent, endothelial cell count reduction is less as compared to penetrating keratoplasty. Corneal hydrops, a special form of the disease usually requires conservative treatment and after the healing process surgery can be performed if necessary.

Chairmen: **Laszlo Modis** (Debrecen - Hungary), **Berthold Seitz** (Homburg - Germany)

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|------|-------|---|
| 8257 | 08:30 | Diagnostic clues in keratoconus. Scheimpflug is better?
Illés Kovács (Budapest - Hungary) |
| 8159 | 08:45 | OCT findings in keratoconus. OCT is better?
Bogumil Wowra (Katowice - Poland) |
| 8256 | 09:00 | Can we avoid surgery? - Crosslinking in the treatment of keratoconus
Zoltán Zsolt Nagy (Budapest - Hungary) |
| 8168 | 09:15 | DALK or PKP? - Surgical management of keratoconus
Berthold Seitz (Homburg/Saar - Germany) |
| 8035 | 09:30 | Update on keratoconus diagnosis and treatment
Laszlo Modis (Debrecen - Hungary) |

08:30-09:45 | RHODES 4**SIS****2267 - LC New concepts in cataract surgery**

Our symposium will discuss current and new procedures during cataract surgery and introduce new concepts related to the optics and mechanics of the eye in order to improve this type of surgery.

Chairmen: **Rafael I. Barraquer** (Barcelona - Spain), **Andrzej Grzybowski** (Olsztyn - Poland)

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|------|-------|---|
| 8081 | 08:30 | Cataract surgery design based on age-related changes in corneal optics
A-Yong Yu (Wenzhou - China) |
| 8092 | 08:55 | The advantage of low concentration of PVI in cataract surgery
Andrzej Grzybowski (Olsztyn - Poland) |
| 8317 | 09:20 | The light sword lens and its usefulness for presbyopia reduction
Zbigniew Jaroszewicz (Warsaw - Poland) |

08:30-09:45 | GALLIENI 1&2**C****2332 - G/RV Update on neuroprotection**

Neuroprotection in glaucoma is still an unmet need. This SIG will focus on the latest updates on neuroprotection including new drug delivery and formulations, recently published data and review of neuroprotection trial. It aims to inform interested clinicians and researchers, what the current thoughts are in the field.

Chairmen: **Maria Francesca Cordeiro** (London - United Kingdom), **Eduardo Maria Normando** (London - United Kingdom)

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|-------|-------|---|
| 5006* | 08:30 | Overview of latest clinical advances
Maria Francesca Cordeiro (London - United Kingdom) |
| 5009 | 08:48 | Recent advances in nanoscopic drug delivery systems for the treatment of glaucoma
Elena Sánchez (Barcelona - Spain) |
| 5012 | 09:06 | Co-delivery of neuroprotective agents from biodegradable microspheres
Rocio Herrero-Vanrell (Madrid - Spain) |
| 5019 | 09:24 | Muller glia as endogenous neuroprotectors of the retina
Elena Vecino (Leioa - Spain) |

09:45-10:10 | HERMES

KN

EVERActa Lecture

Introduced by Einar Stefansson

Immunology and the elder eye
Martine J. Jager (Leiden - The Netherlands)

Several eye diseases occur more frequently in the elderly, such as age-related macular degeneration (AMD), primary open angle glaucoma and intraocular melanoma. Inflammation has become an important player, and while in the past AMD was considered purely a vessel disease, it has become clear that macrophages and complement play an important role in the development of the leaky vessels. The function of macrophages changes when we age. As Makitie and Kivela had shown that macrophages have a prognostic value in uveal melanoma, we started to investigate the role of aging in the development of ocular tumors in a mouse model. Ly observed that depletion of macrophages had no effect in young mice, but prevented intraocular tumor growth in old mice. Maat, Bronkhorst and Brouwer showed that specific chromosomal abnormalities in a uveal melanoma are associated with prognosis, influx of macrophages and a high vessel density.

While working on this, I learned about a patient with glaucoma who had the impression that her visual field had decreased when she had the flu. Around the same time, Dr Dong Feng Chen of the Schepens Eye Research Institute in Boston developed a murine glaucoma model. A Dutch PhD student, Dr Khanh Vu, set out to determine whether inflammation plays a role in glaucoma, and indeed, glaucomatous damage following high eye pressure increased through the induction of immune responses. High eye pressure led to influx of macrophages and T cells into the retina, and the induction of specific antibodies and T cell responses. The T cells are directed against heat shock proteins, which become expressed after trauma. Blocking T cell immune response limited the loss of retinal ganglion cells and axons in the mouse after glaucoma induction. The anti-heat shock immune response did not develop when the mouse lacked a microbiome. Patients with glaucoma also showed anti-heat shock protein antibodies and T cell responses. These data show that inflammation plays a role in several age-related eye disease, including age-related macular degeneration, uveal melanoma and glaucoma.

Makitie T. et al. Tumor-infiltrating macrophages (CD68+ cells) and prognosis in malignant uveal melanoma. Invest Ophthalmol Vis Sci 2001; 42: 1414-1421. Bronkhorst I.H. et al. Detection of M2 macrophages in uveal melanoma and relation with survival. Invest Ophthalmol Vis Sci 2011; 52: 643-650. Doi: 10.1167/iops.10-5979. Ly L.V. et al. In aged mice, outgrowth of intraocular melanoma depends on proangiogenic M2 type macrophages. J Immunol. 2010; 185: 3481-3488. Chen H. et al. Commensal microflora-induced T cell responses mediate progressive neurodegeneration in glaucoma. Nat Commun 2018; Aug 10;9(1): 3209. Doi: 10.1038/s41467-018-05681-9

10:15-11:15 Coffee break - Exhibition Area

11:15-12:30 | HERMES

SIS

2326 - RV Macular interface surgery

We will present all the new facts regarding pathophysiology, investigation, imaging and treatments regarding macular interface pathology.

Chairmen: Georgios Pappas (Heraklion - Greece), Tina Xirou (Athens - Greece)

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|------|-------|--|
| 8223 | 11:15 | Macular interface pathophysiology
George Bastakis (Heraklion - Greece) |
| 8228 | 11:30 | Vitreoretinal & uveitis department, Ophthalmica Eye Institute Thessaloniki
Paris Tranos (Thessaloniki - Greece) |
| 8272 | 11:45 | Vitromacular traction syndrome
Efstratios Paroikakis (Athens - Greece) |
| | 12:00 | Myopic schisis
Theodor Stappler (Lausanne - Switzerland) |
| 8254 | 12:15 | Optic disk pit
Petros Petrou (Athens - Greece) |

11:15-12:30 | RHODES 1**SIS****2340 - G/RV current prospects in optic nerve protection and regeneration**

Retinal ganglion cells (RGC) are exquisitely sensitive to damage caused by trauma or disease. In acute diseases such as ischaemic optic neuropathy or optic neuritis, or in chronic diseases such as glaucoma, injury to RGC axons in the optic nerve leads to rapid RGC death. Retinal ischaemia and retinal artery or vein occlusions directly injure RGC cell bodies in the ganglion cell layer. Enhancing RGC viability (neuroprotection) and regeneration of their axons remains a major goal of basic and translational research.

Chairmen: **Maria Francesca Cordeiro** (London - United Kingdom), **Ann Logan** (Birmingham - United Kingdom)

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|------|-------|---|
| 8229 | 11:15 | Axon transport as a target for promoting RGC survival and optic nerve regeneration
Richard Eva (Cambridge - United Kingdom) |
| 8239 | 11:33 | Fueling axonal regeneration: dendritic energy to the rescue?
Lieve Moons (Leuven - Belgium) |
| 8244 | 11:51 | GSK3/CRMP2 signaling confers PTEN knockout mediated axonal regeneration
Dietmar Fischer (Bochum - Germany) |

11:15-12:30 | RHODES 2**SIS****2299 - COS/LC Refractive surgery in keratoconus**

This symposium will focus on refractive approaches for visual improvement in keratoconus and highlight pearls and pitfalls for both young and experienced corneal surgeons.

Chairmen: **Zisis Gkatzioufas** (Basel - Switzerland), **Nora Szentmary** (Budapest - Hungary)

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| 8046 | 11:15 | Intracorneal ring segments in keratoconus; an evidenced-based approach
Zisis Gkatzioufas (Basel - Switzerland) |
| 8124 | 11:33 | Small apperture-IOL for cataract surgery in keratoconus
Sarah Moussa (Salzburg - Austria) |
| 8048 | 11:51 | Phakic Intraocular Lens Implantation in Keratoconus
Valerie Saw (London - United Kingdom) |
| 8037 | 12:09 | Combined surface ablation+CXl for keratoconus
Miltos Balidis (Thessaloniki - Greece) |

11:15-12:30 | RHODES 3

SIS

2261 - PO/RV Management of intraocular lymphomas

The management of intraocular lymphomas is often challenging. Various therapeutic approaches are currently available and they can be applied in selected cases. The aim of this SIS is to put together ocular oncologists and hemato-oncologists in order to discuss the best management technique in every individual case.

Chairmen: **Nathalie Cassoux** (Paris - France), **Leonidas Zografos** (Lausanne - Switzerland)

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|------|-------|---|
| 8129 | 11:15 | Intravitreal chemotherapy. Indications and results
Denis Malaise (Paris - France) |
| 8194 | 11:30 | Introduction, classification, therapeutic options
Leonidas Zografos (Lausanne - Switzerland) |
| 8218 | 11:45 | Radiotherapy for the treatment of primary intraocular lymphoma and orbital (ocular adnexa) lymphomas
Alessia Pica (Villigen - Switzerland) |
| 8279 | 12:00 | Immunotherapy and systemic chemotherapy for the treatment of intraocular lymphoma. Indications and results
Carole Soussain (Paris - France) |
| 8314 | 12:15 | Primary vitreous and retinal lymphoma (PVRL): risk factor and prognosis
Nathalie Cassoux (Paris- France) |

11:15-12:30 | RHODES 4

SIS

2307 - COS/IM Cornea immunology: current understanding and window of opportunities

The cornea is remarkable, possessing a high degree of order and excellent self-protective and reparative functions. Because of its outstanding importance for vision, there is a need for a functional balanced system to maintain homeostasis. It must maintain a delicate balance between effective defense as well as limiting potential harmful inflammatory responses. Indeed, the cornea has the capacity to mount a specific immune response to infectious, self antigens and allogeneic agents. This SIS will not only characterize the immunological components of the cornea. It also provides an up-to-date overview of the clinically relevant immune mechanisms in host defence, wound healing and response following transplantation.

Chairmen: **Uwe Pleyer** (Berlin - Germany), **Berthold Seitz** (Homburg - Germany)

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|-------|-------|---|
| 8070 | 11:15 | Immune reactions after PKP and DMEK – do they differ only in frequency?
Deniz Hos (Cologne - Germany) |
| 8083 | 11:33 | Influence of the complement system on corneal wound healing
Tobias Brockmann (Berlin - Germany) |
| 8179* | 11:51 | Immune mediators of host defence at the Ocular surface and Cornea
Harminder Dua (Nottingham - United Kingdom) |
| 8140 | 12:09 | Immune modulation following keratoplasty - current and future aspects
Uwe Pleyer (Berlin - Germany) |

11:15-12:30 | GALLIENI 1&2

SIS

2268 - LC Current and future options to treat presbyopia and cataract

Our symposium will cover current and future concepts of accommodative intraocular lenses, new concepts to pharmacologically treat presbyopia and the possible regeneration of the lens with stem cells.

Chairmen: **Timo Eppig** (Schnaittach - Germany), **Ralph Michael** (Barcelona - Spain)

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| 8050* | 11:15 | Accommodative intraocular lens concepts
Timo Eppig (Schnaittach - Germany) |
| 8067 | 11:33 | Autologous cell regeneration of the crystalline lens
Ralph Michael (Barcelona - Spain) |
| 8091 | 11:51 | Pharmacological treatment of presbyopia
Andrzej Grzybowski (Olsztyn - Poland) |
| 8051* | 12:09 | The AkkoLens Lumina accommodative intraocular lens
Michiel Rombach (Breda - The Netherlands) |

12:30-13:45 | RHODES 1

SIS

2341 - LC/G Simulated ocular surgery. Best practice Part III

Ophthalmic surgery training in Europe is asymmetrical and differs according to each region. National regulations, diverse settings and different allocated resources allow for the heterogeneity in ophthalmic surgery learning opportunities and teaching methods. Simulation based surgery training ensures excellent opportunities to build competencies in microsurgery before operating on patients. Simulation based education environments enable structured, deliberate, and controlled learning of different surgical procedures, allow exposure to potential complications and to develop skills to handle them. Besides learning and practicing technical skills, decision-making, teambuilding and communication skills can also be trained using simulation-based education. Upon completion of this symposium participants will be better able to a) Describe an overview on how learning surgery is currently being undertaken in Europe, b) Explain the requirements to create a simulation centre compliant with good practice, c) Highlight how to maximize surgical skills transfer and d) provide practical examples. We will discuss solutions on how to best lead simulation based surgery training compliant with good practice in European ophthalmological teaching centres.

Chairmen: **Elena Prior Filipe** (Lisboa - Portugal), **Gordana Sunaric Mégevand** (Geneva - Switzerland)

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| 8181 | 12:30 | Maximizing the outcomes of simulation based training
Elena Prior Filipe (Lisbon - Portugal) |
| 8193 | 12:45 | Simulation centers accreditation guidelines and good practice
Ajit K. Sachdeva (Chicago - USA) |
| 8203* | 13:00 | Simulated ocular surgery
Rita Gama (Lisbon - Portugal) |
| 8278 | 13:15 | The role of simulators in future education and qualification in ophthalmology
Christina Grupcheva (Varna - Bulgaria) |
| 8212 | 13:30 | Dispelling myths and misconceptions in simulation based education
John Ferris (Cheltenham - United Kingdom) |

12:30-13:45 | RHODES 2

SIS

2274 - COS/NSPH Congenital aniridia - improving knowledge and treatment through European translational research

Congenital aniridia is a rare but devastating pan-ocular disease resulting from mutations in the PAX6 gene causing under- or mis-developed ocular structures and serious vision impairment or blindness. Recently new diagnostic, genetic and molecular methods have become available and are for the first time being applied to better characterize aniridia with the hope of developing more effective treatments to improve vision in this underserved population. Here, we present some of the latest European efforts to promote and coordinate aniridia research and we highlight new research results with translational potential.

Chairmen: **Berthold Seitz** (Homburg - Germany), **Tor Paaske Utheim** (Oslo - Norway),
Edward Wylegala (Katowice - Poland)

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| 8002 | 12:30 | EU COST Action ANIRIDIA-NET: a new, inclusive pan-European network for aniridia research
Neil Lagali (Linköping - Sweden) |
| 8003 | 12:40 | Genotype-phenotype correlation in a French cohort of aniridia
Dominique Bremond-Gignac (Paris - France) |
| 8010* | 12:50 | The tear film cytokine profile is altered in congenital aniridia
Erlend Sommer Landsend (Oslo - Norway) |
| 8021 | 13:00 | Modeling of aniridia-related keratopathy and identification of novel drugs for potential treatment
Daniel Aberdam (Paris - France) |
| 8068 | 13:10 | miRNA profile in normal and aniridia conjunctival cells versus severity of aniridia-associated keratopathy
Lorenz Latta (Homburg/Saar - Germany) |
| 8080 | 13:20 | Small graft, simultaneous amniotic membrane transplantation, temporary lateral tarsorrhaphy and autologous serum improves outcome of penetrating keratoplasty in congenital aniridia with aniridia associated keratopathy
Fabian Fries (Homburg - Germany) |
| 8158 | 13:30 | Posterior segment imaging and anomalies in children with aniridia
Bogumil Wowra (Katowice - Poland) |

12:30-13:45 | RHODES 3

SIS

2272 - PO/COS Ocular complications after irradiation

Radiotherapy is a treatment for most intraocular malignancies, various eyelids and orbital tumors. Complications may occur, including radiation-induced dry eye, cataract, secondary glaucoma, retinopathy, and optic neuropathy. We review the ocular side effects of radiation administered from brachytherapy, proton beam radiotherapy, and external beam radiotherapy and their potential treatments.

Chairmen: **Frederic Mouriaux** (Rennes - France), **Juliette Thariat** (Caen - France)

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|------|-------|--|
| 8284 | 12:30 | Which irradiation technique for which ocular tumor
Juliette Thariat (Caen - France) |
| 8163 | 12:45 | Ocular surface diseases following ocular irradiation
Jutta Horwath-Winter (Graz - Austria) |
| 8286 | 13:00 | Retinal diseases after irradiation
Celia Maschi (Nice - France) |
| 8151 | 13:15 | Optic nerve complications after irradiation
Denis Malaise (Paris - France) |
| 8183 | 13:30 | Adnexal complications after irradiation
Frederic Mouriaux (Rennes - France) |

12:30-13:45 | RHODES 4

JM

OOG 1 Conjunctiva

Chairmen: **Steffen Heegaard** (Copenhagen - Denmark), **Martine J. Jager** (Leiden - The Netherlands)

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|------|-------|---|
| 5432 | 12:30 | Satellite in transit metastases in a case of loco-regional metastatic conjunctival melanoma
Denis Malaise, Alexandre Matet, Clément Beaulaton, Christine Lévy, Livia Lumbroso, Sophie Gardrat, Raymond Barnhill, Nathalie Cassoux (Paris - France) |
| 5430 | 12:36 | Conjunctival melanoma is a molecular distinct mucosal melanoma with high expression of PD-L1
Lauge Hjorth Mikkelsen¹, Emil Maag², Mogens Kruhøffer², Peter Bjerre Toft¹, Mette Klarskov Andersen¹, Karin Wadt¹, Ann-Cathrine Larsen¹, Steffen Heegaard¹ (¹ Copenhagen - Denmark, ² Aarhus - Denmark) |
| 5186 | 12:42 | A consensus dataset for the management of conjunctival melanoma in the multidisciplinary setting
Max Conway¹, Melissa Wegkamp², Anthony D Joshua¹, The Kinghorn Cancer Centre Multi-Institutional O.O. MDT Group¹, Svetlana Cherepanoff¹ (¹ Sydney - Australia, ² Leiden - The Netherlands) |
| 5336 | 12:48 | Targeted genome sequencing of negative and positive human papillomavirus induced conjunctival carcinomas
Ingvild Ramberg*, Peter Toft, David Jensen, Christian von Buchwald, Finn Cilius Nielsen, Mikkel Funding, Steffen Heegaard (Copenhagen - Denmark) |

12:30-13:45 | GALLIENI 1&2

JM Women in EVER

Chairman: Sayeh Pourjavan (Zaventem - Belgium)

- 12:30 Sayeh Pourjavan (Zaventem - Belgium)
- 8322* 12:45 "My career in ophthalmology" - by a non-ophthalmologist
Aachal Kotecha (St Albans - United Kingdom)
- 8320 13:00 Never give up
Demet Yuksel (Brussels - Belgium)
- 8318* 13:15 What is the relationship between eye drops and women in science?
Miriam Kolko (Glostrup - Denmark)

13:45-14:15 Coffee break - Exhibition Area

14:15-15:30 | HERMES

RF Young Investigators Award Session 1

Chairmen: Alain Bron (Dijon - France), Manuel Vidal-Sanz (Murcia - Spain)

- 5148 14:15 Novel corneal crosslinking technique with eosin-Y and visible light
Erdost Yildiz, Muhammad Anwaar Nazeer, Betul Bayraktutar, Noushin Zibandeh, Seda Kizilel, Afsun Sahin (Istanbul - Turkey)
- 5228 14:24 Regulation of the glutamate release by pH and GABA at the axon terminal of ROD photoreceptors
Alejandro Gallego-Ortega¹, Fei Liao², Manuel Vidal-Sanz¹, Pedro De la Villa² (¹Murcia - Spain, ²Alcalá de Henares - Spain)
- 5445 14:33 Curry to treat Alzheimer's disease?
Ehtesham Shamsher, Li Guo, Benjamin M. Davis, Vy Luong, Nivedita Ravindran, Satyanarayana Somavarapu, M. Francesca Cordeiro* (London - United Kingdom)
- 5304 14:42 Pseudoexfoliation glaucoma - Do genes or environment matter more?
Alison Greene, Sarah Eivers, Edward Dervan, Colm O'Brien, Deborah Wallace (Dublin - Ireland)
- 5102 14:51 Efficacy of Echinomycin in hypoxia-inducible factor-mediated ocular angiogenesis
Flavia Plastino¹, Álvaro Santana Garrido², Monica Aronsson¹, Alfonso Mate Barrero², Anders Kvanta¹, Carmen Maria Vázquez Cueto², Helder André¹ (¹Stockholm - Sweden, ²Seville - Spain)
- 5458 15:00 Germline variants in the MBD4 gene are rare in patients with uveal melanoma
Pauliina Repo, Johannes Jäntti, Reetta-Stiina Järvinen, Martin Täll, Virpi Raivio, Tero Kivelä*, Joni Turunen* (Helsinki - Finland)

14:15-15:30 | RHODES 1



Rapid Fire 2 - PBP

Chairmen: **Neville N. Osborne** (Oxford - United Kingdom), **Leopold Schmetterer** (Singapore - Singapore)

- 5063 14:15 The potent integrin antagonist THR-687 is a promising next-generation drug candidate for the treatment of multifactorial retinal diseases
Tjing-Tjing Hu*, Tine Van Bergen, Isabelle Etienne, Jean H.M. Feyen, Elke Vermassen (Heverlee-Leuven - Belgium)
- 5114 14:21 Cord blood serum (CBS) reduces the expression of GFAP and inflammatory cytokines in retinal Muller cells under stress damage
Carmen Ciavarella¹, Marina Buzzi¹, Elisa Bergantin¹, Chiara Coslovi¹, Stefano Di Marco², Silvia Bisti², Emilio Campos², **Piera Versura²** (¹Bologna - Italy, ²L'Aquila - Italy)
- 5199 14:27 Study of the functional integrity of the retinal pigment epithelium with a new technique in two models of inherited retinal degeneration
Johnny Di Pierdomenico, Francisco Javier Valiente Soriano, Manuel Salinas Navarro, Diego García-Ayuso, María Paz Villegas-Pérez, Manuel Vidal-Sanz, Marta Agudo-Barriuso (Murcia - Spain)
- 5251 14:33 Small molecule innate immune inhibitors to enhance synthetic mRNA translation for ocular delivery
An-Katrien Minnaert, Joke Devoldere, Karen Peynshaert, Stefaan De Smedt, Katrien Remaut (Gent - Belgium)
- 5309 14:39 Different rate of retinal degenerations in mice with two distinct mutations in the Mitf gene
Thor Eysteinnsson, Ingunn Jónasdóttir, Andrea García-Llorca, Thorunn Björg Gudmundsdóttir, Margrét Helga Ögmundsdóttir, Eiríkur Steingrímsson (Reykjavik - Iceland)
- 5328 14:45 Pharmacokinetics of angiotensin-receptor blocker in cyclodextrin nanoparticle eye drops in rabbits
Martin Kallab¹, Kornelia Schützenberger¹, Nikolaus Hommer¹, Bhavapriya Jasmin Schäfer¹, Aimin Tan², Phatsawee Jansook³, Einar Stefansson^{4*}, Gerhard Garhöfer^{1*} (¹Vienna - Austria, ²Toronto - Canada, ³Bangkok - Thailand, ⁴Reykjavik - Iceland)
- 5340 14:51 Unilateral optic nerve axotomy in pigmented mice causes RGCs loss in the contralateral uninjured retina that is prevented by microglial inhibition
Fernando Lucas Ruiz, Caridad Galindo-Romero, Kristy Tatiana Rodríguez-Ramírez, Manuel Vidal-Sanz, Marta Agudo-Barriuso (Murcia - Spain)
- 5411 14:57 Safety and effects of intravitreal or subretinal injections of human bone marrow-derived mononuclear cells to P23H-1 and RCS rats
Johnny Di Pierdomenico, María Elena Rodríguez González-Herrero, Miguel Blanquer Blanquer, Diego García Ayuso, Marta Agudo Barriuso, Manuel Vidal Sanz, María Paz Villegas Pérez (Murcia - Spain)
- 5416 15:03 A model of focal light emitting diode-induced photoreceptor degeneration in pigmented mice
Juan Antonio Miralles de Imperial-Ollero, Johnny Di Pierdomenico, Jose Bernal-Garro, María Paz Villegas-Pérez, Francisco Javier Valiente-Soriano, Manuel Vidal-Sanz (Murcia - Spain)
- 5463 15:09 Improvement and validation of high precision ocular oximetry using a convolutional neural network algorithm and a phantom eye
Joannie Desroches*, Damon DePaoli, Nicolas Lapointe, Catherine Paulin, Prudencio Tossou, Patrick Sauvageau, Dominic Sauvageau, Daniel Côté (Québec - Canada)

14:15-15:30 | RHODES 2

SIS

**2271 - PO/COS Advances in Corneal Regenerative Therapies:
Results from the EU Horizon2020 Project ARREST BLINDNESS**

ARREST BLINDNESS was the first cornea research project funded under the EU Horizon 2020 program, with the goal of developing advanced next-generation corneal regenerative and restorative therapies, offering hope to patients where no suitable therapy exists. The project started in 2016 and runs until the end of 2019. In this symposium, the major achievements of the project will be described, with each talk representing a distinct work package within the project, targeting a specific cause of corneal blindness. The results demonstrate the concrete advancements that have been made over the past four years, to bring new advanced therapies closer to widespread clinical adoption.

Chairmen: **Jesper Hjortdal** (Aarhus - Denmark), **Martine J. Jager** (Leiden - The Netherlands)

- | | | |
|-------|-------|---|
| 8001 | 14:15 | ARREST BLINDNESS: a brief overview from the project coordinator
Neil Lagali (Linköping - Sweden) |
| 8005 | 14:25 | Targeting lymphangiogenesis: improving the success of high-risk corneal transplantation
Deniz Hos (Cologne - Germany) |
| 8028 | 14:35 | The fish scale based Biocornea: an off-the shelf device for managing acute corneal perforations
Kenn Curt Daniel (Leiden - The Netherlands) |
| 8030* | 14:45 | Improving corneal nerve regeneration: initial results of a novel regenerative agent
Juana Gallar (San Juan de Alicante - Spain) |
| 8127 | 14:55 | In vitro expanded corneal endothelial cell sheets: towards a new therapeutic approach
Silke Oellerich (Rotterdam - The Netherlands) |
| 8136 | 15:05 | Xeno-free Cultivated Limbal Epithelial Stem Cell Transplantation: results of an ongoing phase I/II clinical study
Sorcha Ni Dhubhghaill (Antwerp - Belgium) |
| 8139* | 15:15 | Bioengineered corneal stroma: from laboratory to clinical adoption
Mehrdad Rafat (Linköping - Sweden) |

14:15-15:30 | RHODES 3



Rapid Fire 3 - G

Chairmen: **Andrzej Grzybowski** (Olsztyn - Poland), **Andrew Tatham** (Edinburgh - United Kingdom)

- 5284 14:15 P2RY12 expression at different time-points in a mouse model of experimental glaucoma
José A. Fernández-Albarral¹, Ana I. Ramírez¹, Rosa de Hoz¹, Elena Salobar-García¹, Inés López-Cuenca¹, Ester Liscastro², Francisco J. Valiente-Soriano³, Manuel Vidal-Sanz³, José M. Ramírez¹, Juan J. Salazar¹ (¹Madrid - Spain, ²Rende - Italy, ³Murcia - Spain)
- 5457 14:21 Candidate gene analysis of germline variants in Finnish patients with juvenile open-angle glaucoma
Reetta-Stiina Järvinen, Abdessallam Tadjji, Pauliina Repo, Perttu Liuska, Mika Harju, Tero Kivelä*, Joni Turunen* (Helsinki - Finland)
- 5124 14:27 Prevalence of risk variants for glaucoma in the MYOC gene in the general population
Perttu Liuska, Tero Kivelä*, Joni Turunen* (Helsinki - Finland)
- 5077 14:33 Primary open angle glaucoma and vascular risk factors: a review of population based studies from 1990 to 2017
Andrzej Grzybowski¹, Mariusz Och¹, Piotr Kanclerz², Christopher Leffler³ (¹Olsztyn - Poland, ²Gdansk - Poland, ³Richmond - USA)
- 5349 14:39 The ability of eye tracking perimetry to detect glaucoma
Andrew Tatham*, Pam McClean, Ian Murray, Alice McTrusty, Brash Harry, Fleck Brian, Robert Minns (Edinburgh - United Kingdom)
- 5241 14:45 In vivo anterior optic nerve head changes as a function of visual field loss in glaucoma
Ryan Lee Bartlett¹, Bethany E. Frost^{1,2}, Nick White¹, James R. Fergusson¹, James E. Morgan¹, Rachel V. North¹, Julie Albon¹ (¹Cardiff - United Kingdom, ²Dublin - Ireland)
- 5404 14:51 Effect of sustained-release bimatoprost implant (Bimatoprost SR) on visual field mean deviation in glaucoma patients in a phase 1/2 clinical trial
Ingeborg Stalmans^{1*}, Marina Bejanian², Margot Goodkin², Jane Zhang², Kevin Wang², Marcos Rivas², Michael Robinson², Douglas J. Rhee³ (¹Leuven - Belgium, ²Irvine - USA, ³Cleveland - USA)
- 5196 14:57 Anti-glaucomatous preparations and effect on human conjunctival goblet cells
Anne Hedengran¹, Xenia Begun¹, Olivia Müllertz¹, Zaynab Mouhammad¹, Rupali Vohra¹, Goran Petrovski², Miriam Kolko^{1*} (¹Copenhagen - Denmark, ²Oslo - Norway)
- 5453 15:03 Effectiveness of selective laser trabeculoplasty in glaucoma patients: A 6 years follow up study
Indira Aristeguieta, Eleonora Ayala, Karla Gonzales-Farro, Alfonso Anton, Laura Beltran-Agullo, Antonio Morilla (Barcelona - Spain)

14:15-15:30 | GALLIENI 1&2



Rapid Fire 4 - COS

Chairmen: **Lazlo Modis** (Debrecen - Hungary), **Zisis Gkatzioufas** (Basel - Switzerland)

- 5164 14:15 Bacterial nanocellulose compared to the amniotic membrane as a potential corneal bandage material
Irene Anton-Sales, Justin Christopher D'Antin, Jorge Fernandez, Victor Charoenrook, Rafael I. Barraquer, Anna Laromaine, Anna Roig, Ralph Michael (Barcelona - Spain)
- 5115 14:21 Conjunctival bulbar redness (CBR) analysis to quantify inflammation in dry eye patients
Piera Versura, Alberto Interdonato, Giuseppe Giannaccare, Marco Pellegrini, Federico Bernabei, Fabiana Moscardelli, Chiara Coslovi, Fabio Guaraldi (Bologna - Italy)
- 5341 14:27 In vivo corneal confocal microscopy study of keratoendotheliitis fugax hereditaria caused by a pathogenic variant in the NLRP3 Gene
Joni Turunen*, Annamari Immonen, Reetta-Stiina Järvinen, Sabita Kawan, Pauliina Repo, Anna Korsbäck, Aino Jaakkola, Anna Majander, Minna Vesaluoma, Tero Kivelä* (Helsinki - Finland)
- 5175 14:33 In vitro evaluation and transplantation of human corneal endothelial cells cultured on biocompatible carriers
Alina Miron^{1*}, Daniele Spinozzi¹, Jessica T. Lie¹, Mehrdad Rafat^{2*}, Neil Lagali², Gerrit R.J. Melles¹, Sorcha Ni Dhubhghaill¹, Isabel Dapena¹, Silke Oellerich¹ (¹Rotterdam - The Netherlands, ²Linköping - Sweden)
- 5296 14:39 Clinical efficacy of MC2-03 (cyclosporin eye drop) in treatment of dry eye disease patients with severe keratitis randomized in the NORTHERN LIGHTS phase 2b trial
Morten Praestegaard^{1*}, Frédéric Gomez², Miguel A. Teus³, Jutta Horwath-Winter⁴, Steffen Heegaard⁵ (¹Hørsholm - Denmark, ²Paris - France, ³Madrid - Spain, ⁴Graz - Austria, ⁵Copenhagen - Denmark)
- 5242 14:45 A transcriptomic study of native, expanded, and engineered human corneal endothelial cells
Aboulghassem Shahdadfar, Mazyar Yazdani (Oslo - Norway)
- 5079 14:51 The effect of antiamebic agents and Ce6-PDT on Acanthamoeba castellanii trophozoites and cysts, in vitro
Lei Shi¹, Tanja Stachon¹, Lorenz Latta¹, Mohamed Ibrahim Elhaway¹, Gubesh Gunaratnam¹, Erika Orosz², Albrecht F. Kiderlen³, Berthold Seitz¹, Markus Bischoff¹, Nóra Szentmáry¹ (¹Homburg/Saar - Germany, ²Budapest - Hungary, ³Berlin - Germany)
- 5132 14:57 The role of ROS levels on the activation of SMAD2 by TGFβ1 in corneal fibroblasts
Zheng Wang, Audrey Bernstein, J. Mario Wolosin (New York - USA)
- 5040 15:03 Ex vivo expansion of human labial mucosal epithelium for corneal surface reconstruction
Maxim Gerasimov, Sergey A. Borzenok, Boris E. Malyugin, Dmitriy S. Ostrovskiy (Moscow - Russia)

15:30-16:45 | HERMES

RF

Young Investigators Award Session 2

Chairmen: **Maria Francesca Cordeiro** (London - United Kingdom), **Kai Kaarniranta** (Kuopio - Finland)

- 5303 15:30 Review of endogenous endophthalmitis in a tertiary eye centre; can we spot the trends?
Namita Mathews, **Robery J. Barry**, **Gibran F. Butt** (Birmingham - United Kingdom)
- 5361 15:39 A conditional Mitf mouse model of geographic atrophy (GA)
Andrea García Llorca¹, **Alba Sabaté**¹, **Margrét Helga Ögmundsdóttir**¹, **Lionel Larue**², **Franck Gesbert**², **Eiríkur Steingrímsson**¹, **Thor Eysteinnsson**¹ (¹Reykjavík - Iceland, ²Orsay - France)
- 5315 15:48 Individuals prevalence affected by myopia in the riverside population of Santarém, Pará, compared to the urban population of Campinas, São Paulo
Lais Raphaelli Caramel, **Alexandre Scremin Czezacki**, **Bruna Albertini Reis**, **Giovanna Oncala Simão**, **Gustavo de Campos Olavarria**, **Henrique Ferreira Greco**, **Isabella Carinhani Braghetto**, **Isabella Soares Ricioli**, **José Anibale Rodrigues Junior**, **Luísa da Cunha Gobbo**, **Marianne Benedicto de Souza**, **Otto Albuquerque Beckedorff**, **Vanessa Giffoni Braga Mont'Alvão**, **Thiago José Delfraro Carmo**, **Luíza Abreu Minussi**, **Elvira Barbosa Abreu** (Campinas - Brazil)
- 5408 15:57 Short and long term effects of NMDA-induced retinal excitotoxicity on melanopsin and non-melanopsin containing retinal ganglion cells
Beatriz Vidal-Villegas¹, **Johnny Di Pierdomenico**², **Juan Antonio Miralles de Imperial-Ollero**², **Jose Manuel Bernal-Garro**², **María Paz Villegas-Pérez**², **Manuel Vidal-Sanz**² (¹Madrid - Spain, ²Murcia - Spain)
- 5289 16:06 Diabetic retinopathy outcomes in patients undergoing pancreatic transplants in West London
Maja Szymanska, **Timothy Yap**, **Eduardo Normando**, **M. Francesca Cordeiro*** (London - United Kingdom)
- 5422 16:15 Photo-ablation of human vitreous opacities by light-induced vapor nanobubbles
Félix Sauvage¹, **Juan Fraire**¹, **Katrien Remaut**¹, **J. Sebag**², **Karen Peynshaert**¹, **Frans Van de Velde**³, **Ranhua Xiong**¹, **Marie-José Tassignon**⁴, **Toon Brans**¹, **Kevin Braeckmans**¹, **Stefaan De Smedt**¹ (¹Ghent - Belgium, ²Huntington Beach - USA, ³Boston - USA, ⁴Antwerp - Belgium)

15:30-16:45 | RHODES 1



Rapid Fire 5 - EOVS

Chairmen: **Miguel Castelo Branco** (Coimbra - Portugal), **Sascha Klee** (Ilmenau - Germany)

- 5402 15:30 Electrophysiological methods- exact diagnostics in ophthalmology
Tamara Stetinova (Bratislava - Slovakia)
- 5290 15:36 Clinical experiences in flash adaptometry
Hermann Krastel^{1*}, **Marlene Zyganow**², **Feras Kaltakji**¹, **Michael May**³, **Frank Schlichtenbrede**¹ (¹Mannheim - Germany, ²Heidelberg - Germany, ³Brandenburg - Germany)
- 5295 15:42 The effect of stimulus contrast on the harmonic components of steady state visual evoked potentials
Benjamin Solf (Ilmenau - Germany)
- 5456 15:48 Electrical synapses interconnecting axons in the optic nerve head – a novel model of optic nerve function
Marita Pietrucha-Dutczak¹, **Saeed Akhtar**², **Xiaonan Liu**³, **Lucia Podracka**⁴, **Elisa Toropainen**⁴, **Aljoharah Alkanaa**², **Marika Ruponen**⁴, **Arto Urtti**^{4*}, **Markku Varjosalo**³, **Kai Kaarniranta**⁴, **Joanna Lewin-Kowalik**¹, **Adrian Smedowski**¹ (¹Katowice - Poland, ²Riyadh - Saudi Arabia, ³Helsinki - Finland, ⁴Kuopio - Finland)
- 5370 15:54 Detecting hydroxychloroquine retinal toxicity using a novel multifocal electroretinography stimulus
Stuart Coupland^{*}, **Adrian Tsang**, **Chloe Gottlieb**, **Miso Gostimir**, **Michael Dollin**, **Harrish Nithianandan** (Ottawa - Canada)
- 5300 16:00 The link between central retinal thickness and retinal nerve fibre layer thickness in patients with retinitis pigmentosa
Anna Friesacher^{*}, **Christophe Valmaggia**, **Margarita Todorova** (St. Gallen - Switzerland)
- 5371 16:06 Activating an optogenetically engineered retina with a wearable headset in patients with retinitis pigmentosa
Joël Chavas^{*}, **Nacer Boussahoul**, **Damien Duport**, **Charlie Galle**, **Francesco Galluppi**, **Laure Blouin**, **Pierre Burguière**, **Thomas Hardin**, **Proshato Shabestary**, **David Gray** (Paris - France)
- 5451 16:12 Development of a new animal model of radiation retinopathy using an experimental radiation platform
Jeremie Villaret¹, **Frederic Pouzoulet**², **Carole Thomas**², **Patricia Crisanti**¹, **Kimberley Delaunay**¹, **Nathalie Cassoux**¹, **Alexandre Matet**¹, **Francine Behar-Cohen**^{1*} (¹Paris - France, ²Orsay - France)

15:30-16:45 | RHODES 2

SIS

2302 - COS Corneal Biomechanics in Refractive Surgery

This symposium aims to highlight biomechanical aspects of corneal refractive procedures and deepen our knowledge in corneal biomechanics in regard with refractive surgery.

Chairmen: **Zisis Gkatzioufas** (Basel - Switzerland), **Nora Szentmary** (Budapest - Hungary)

- | | | |
|-------|-------|---|
| 8293* | 15:30 | Corneal biomechanics in refractive surgery
Thomas Armin Fuchsluger (Rostock - Germany) |
| 8232 | 15:48 | Changes in biomechanical properties of keratoconic corneas following intracorneal ring segment (ICRS) implantation
Loay Daas (Homburg/Saar - Germany) |
| 8038 | 16:06 | Biomechanical profile of refractive surgery procedures
Miltos Balidis (Thessaloniki - Greece) |
| 8047 | 16:24 | Protective role of Xtra-factor in refractive surgery
Zisis Gkatzioufas (Basel - Switzerland) |

15:30-16:45 | RHODES 3



Rapid Fire 6 - MBGE

Chairmen: Alice Davidson (London - United Kingdom), Hannah Levis (Liverpool - United Kingdom)

- 5165 15:30 Genetic analysis of pseudoexfoliation glaucoma risk in an Irish population
Sarah Eivers, Alison Greene, Edward Dervan, Colm O' Brien, Deborah Wallace (Dublin - Ireland)
- 5376 15:36 Activating mutations in discoidin domain receptor 2 cause Warburg-Cinotti Syndrome
Linda Zi Yan Xu¹, Hanne Jensen², Jennifer J. Johnston³, Emilio Di Maria⁴, Katja Kloth⁵, Ileana Cristea¹, Julie C. Sapp³, Thomas N. Darling³, Laryssa A. Huryn³, Lisbeth Tranebjærg², Elisa Cinotti⁶, Christian Kubisch⁵, Eyvind Rødahl¹, Ove Bruland¹, Leslie G. Biesecker³, Gunnar Houge¹, Cecilie Brestrup¹ (¹Bergen - Norway,
- 5365 15:42 Familial aniridia spectrum in four families of Czech origin with PAX6 mutations
Jana Moravikova, Lubica Dudakova, Zbynek Kozmik, Pavlina Skalicka, Petra Liskova (Prague - Czech Republic)

15:30-16:45 | RHODES 3



Rapid Fire 6 - NSPH

Chairmen: Huban Atilla (Ankara - Turkey), Andrzej Grzybowski (Olsztyn - Poland)

- 5485 15:48 The epidemiology of myopia in school children worldwide
Andrzej Grzybowski¹, Piotr Kanclerz², Kazuo Tsubota³, Carla Lanca⁴, Seang-Mei Saw⁴ (¹Olsztyn - Poland, ²Gdansk - Poland, ³Tokyo - Japan, ⁴Singapore - Singapore)
- 5151 15:54 Influence of strabismus on the motor skills in children
Coralie Hemptinne, Thomas Pellissier, Clément Ramirez Ruiz, Catherine Vanderveken, Demet Yuksel (Brussels - Belgium)
- 5293 16:00 The hypocritical optic disc in long term visual loss
Hermann Krastel, Achim Gass, Marwa Erwemi, Christian Kahlert, Jost B. Jonas* (Mannheim - Germany)
- 5267 16:06 An unusual case of intradural haemangioma of the optic nerve mimicking optic neuritis
Abigail Hopkins¹, Sachin Salvi, Archana Airody², Richard Gale² (¹Macclesfield - United Kingdom, ²York - United Kingdom)
- 5198 16:12 Visual changes in patients with early type 2 diabetes mellitus without diabetic retinopathy due to possible subclinical ischemia
María José Vicente, Elisa Vilades, Elvira Orduna, Beatriz Cordón, Javier Pérez-Velilla, Isabel Melchor, Laura Gil-Arribas, María Jesús Rodrigo, María Satué, Elena García-Martín (Zaragoza - Spain)

15:30-16:45 | RHODES 4

RF

Rapid Fire 7 - IM

Chairman: **Luc Van Os** (Edegem - Belgium)

5326 15:30 EYS606 for the treatment of non-infectious uveitis
Florence Hoogewoud, Ronald Buggage, Francine Behar-Cohen* (Paris - France)

RF

Rapid Fire 7 - LC

Chairmen: **Konstantin Galichanin** (Uppsala - Sweden), **Andrzej Grzybowski** (Olsztyn - Poland)

5487 15:36 Refraction in eyes filled with silicone oil
Piotr Kanclerz¹, Andrzej Grzybowski², Christoph Leisser³, Pawel Lipowski¹ (1Gdansk - Poland, ²Olsztyn - Poland, ³Vienna - Austria)

5355 15:42 The Influence of stereopsis on ability to perform simulated cataract surgery
Andrew Tatham*, James Dutton, Alice Watkins, Baljean Dhillon (Edinburgh - United Kingdom)

5190 15:48 Risk of corneal transplantation after phacoemulsification in patients with cornea guttata
Andreas Viberg¹, Branka Samolov², Margareta Claesson Armitage³, Anders Behndig¹, Berit Byström¹ (¹Umeå - Sweden, ²Stockholm - Sweden, ³Gothenburg - Sweden)

15:30-16:45 | GALLIENI 1&2

RF

Rapid Fire 8 - ACB

Chairmen: **Anu Kauppinen** (Kuopio - Finland), **Goran Petrovski** (Oslo - Norway)

- 5182 15:30 Changes in the expression of autophagy markers in a rat model of retinopathy of prematurity
Noemi Anna Pesce¹, **Filippo Locri¹**, **Massimo Dal Monte¹**, **Helder André²** (¹Pisa - Italy, ²Stockholm - Sweden)
- 5100 15:36 The role of hypoxia-inducible factors in age-related macular degeneration
Helder André (Stockholm - Sweden)
- 5425 15:42 Oxidative stress induces mitochondrial dysfunction and autophagy in ARPE-19 cells
Janusz Blasiak¹, **Gabriela Barszczewska¹**, **Patrycja Gralewska¹**, **Kai Kaarniranta²** (¹Lodz - Poland, ²Kuopio - Finland)
- 5329 15:48 Increased lipofuscin accumulation associated with disturbed mitophagy in NRF2/PGC1 α double knockout mice
Iswariyaraja Sridevi Gurubaran (Kuopio - Finland)
- 5263 15:54 The HuR/ELAVL1 expression is altered in Nrf2-deficient contexts
Marialaura Amadio¹, **Irene D'Angelo¹**, **Stefano Govoni¹**, **Szabolcs Felszeghy²**, **Kai Kaarniranta²** (¹Pavia - Italy, ²Kuopio - Finland)
- 5231 16:00 Inhibition of adaptor proteins MAVS and TXNIP reduces inflammasome activation in RPE cells
Sofia Ranta-Aho, **Niina Bhattarai**, **Eveliina Korhonen**, **Niina Piippo**, **Maria Hytti**, **Kai Kaarniranta**, **Anu Kauppinen** (Kuopio - Finland)

16:45-17:15 | HERMES

PS

Prize Award Ceremony and Closing Remarks

POSTERS

16:00-17:00



Poster Session COS

Chairmen: **Thomas Armin Fuchsluger** (Rostock - Germany), **Philip Maier** (Freiburg - Germany)

- 5164 T.001 Bacterial nanocellulose compared to the amniotic membrane as a potential corneal bandage material
rf **Irene Anton-Sales, Justin Christopher D'Antin, Jorge Fernandez, Victor Charoenrook, Rafael I. Barraquer, Anna Laromaine, Anna Roig, Ralph Michael** (Barcelona - Spain)
- 5115 T.002 Conjunctival bulbar redness (CBR) analysis to quantify inflammation in dry eye patients
rf **Piera Versura, Alberto Interdonato, Giuseppe Giannaccare, Marco Pellegrini, Federico Bernabei, Fabiana Moscardelli, Chiara Coslovi, Fabio Guaraldi** (Bologna - Italy)
- 5341 T.003 In vivo corneal confocal microscopy study of keratoendotheliitis fugax hereditaria caused by a pathogenic variant in the NLRP3 Gene
rf **Joni Turunen*, Annamari Immonen, Reetta-Stiina Järvinen, Sabita Kawan, Pauliina Repo, Anna Korsbäck, Aino Jaakkola, Anna Majander, Minna Vesaluoma, Tero Kivelä** (Helsinki - Finland)
- 5175 T.004 In vitro evaluation and transplantation of human corneal endothelial cells cultured on biocompatible carriers
rf **Alina Miron^{1*}, Daniele Spinozzi¹, Jessica T. Lie¹, Mehrdad Rafat^{2*}, Neil Lagali², Gerrit R.J. Melles¹, Sorcha Ni Dhubhghaill¹, Isabel Dapena¹, Silke Oellerich¹** (¹Rotterdam - The Netherlands, ²Linköping - Sweden)
- 5296 T.005 Clinical efficacy of MC2-03 (cyclosporin eye drop) in treatment of dry eye disease patients with severe keratitis randomized in the NORTHERN LIGHTS phase 2b trial
rf **Morten Praestegaard^{1*}, Frédéric Gomez², Miguel A. Teus³, Jutta Horwath-Winter⁴, Steffen Heegaard⁵** (¹Hørsholm - Denmark, ²Paris - France, ³Madrid - Spain, ⁴Graz - Austria, ⁵Copenhagen - Denmark)
- 5242 T.006 A transcriptomic study of native, expanded, and engineered human corneal endothelial cells
rf **Aboulghassem Shahdadfar, Mazyar Yazdani** (Oslo - Norway)
- 5079 T.007 The effect of antiamebic agents and Ce6-PDT on Acanthamoeba castellanii trophozoites and cysts, in vitro
rf **Lei Shi¹, Tanja Stachon¹, Lorenz Latta¹, Mohamed Ibrahim Elhawry¹, Gubesh Gunaratnam¹, Erika Orosz², Albrecht F. Kiderlen³, Berthold Seitz¹, Markus Bischoff¹, Nóra Szentmáry¹** (¹Homburg/Saar - Germany, ²Budapest - Hungary, ³Berlin - Germany)
- 5132 T.008 The role of ROS levels on the activation of SMAD2 by TGFβ1 in corneal fibroblasts
rf **Zheng Wang, Audrey Bernstein, J. Mario Wolosin** (New York - USA)
- 5040 T.010 Ex vivo expansion of human labial mucosal epithelium for corneal surface reconstruction
rf **Maxim Gerasimov, Sergey A. Borzenok, Boris E. Malyugin, Dmitriy S. Ostrovskiy** (Moscow - Russia)
- 5037 T.011 Changes in the ABCD keratoconus grade after corneal cross linking
Abbas Ali Yekta¹, Mohammad Reza Sedaghat¹, Hamed Momeni-Moghaddam¹, Zienab Danesh¹, Mehdi Khabazkhoob², Javad Heravian Shandiz¹, Abbas Azimi Khorasani¹, Hadi Ostadimoghaddam¹, Asieh Ehsaei¹, Reihaneh Yekta² (¹Mashhad - Iran, ²Tehran - Iran)

POSTERS

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Thursday

- 5057 T.012 Difference of corneal endothelial cells according to senescence
Young Joo Shin, Jin Sun Hwang, Yoon Kyung Jang (Seoul - South Korea)
- 5072 T.013 Functional and structural evaluation of the meibomian gland using a LipiView interferometer in Orthokeratology wearers
Minji Ha, Kyungsun Na, Jiyoung Lee (Seoul - South Korea)
- 5073 T.014 Keratoconus recognition using a parameter set determined from IOP-matched scenario
Lei Tian (Beijing - China)
- 5074 T.015 Is central corneal thickness a constant during air puff indentation with Corvis ST?
Lei Tian (Beijing - China)
- 5075 T.016 Epithelium-off and trans-epithelial pulsed accelerated corneal cross-linking for treatment of progressive keratoconus: twelve-month results
Lei Tian (Beijing - China)
- 5076 T.017 Effect of non-invasive tear stability assessment on the upper and lower tear meniscus height
Lei Tian (Beijing - China)
- 5080 T.018 Corneal asphericity differences between nasal-temporal and superior-inferior quadrants in myopic Korean children
Heejeong Chun, Minji Ha, Kyungsun Na (Seoul - South Korea)
- 5088 T.019 Influence of coenzyme Q10 on ocular surface microbiota
Tolga Kocaturk, Murat Telli, Berna Korkmazgil, Mehmet Bilgen (Aydin - Turkey)
- 5105 T.020 Outcome simultaneous replacement of stromal donor lenticular in cornea with ectasia during smile surgery
Farideh Doroodar (Tehran - Iran)
- 5135 T.021 Effects of type 2 diabetes mellitus on gene expression profile of Meibomian glands in mice
Erdost Yildiz, Noushin Zibandeh, Berna Özer, Afsun Sahin (Istanbul - Turkey)
- 5138 T.022 Necrotizing scleritis after "pterygium" excision with mitomycin C
Anna Friesacher*, Marco Alder, Rheinhard Ruesch, Christophe Valmaggia, Margarita Todorova (St Gallen - Switzerland)
- 5142 T.023 Clinical stability in the fellow non-operated eye from asymmetric keratoconus patients
Diogo Lopes¹, Pedro Baptista², Nelson Sena³, Sandra Barros¹, Inês Machado¹, Renato Ambrósio Jr^{1*} (¹Lisboa - Portugal, ²Porto - Portugal, ³Rio de Janeiro - Brazil)
- 5174 T.024 Improving endothelial cell migration by novel in vitro 3D culture of corneal grafts
Alina Miron*, Daniele Spinozzi, Jessica Lie, Silke Oellerich, Gerrit R.J. Melles, Sorcha Ní Dhubhghaill (Rotterdam - The Netherlands)
- 5179 T.025 Ribociclib- induced vortex keratopathy
Tamara Shukair (Madrid - Spain)
- 5180 T.026 Corneal crosslinking for therapy-resistant keratitis with corneal melting; it is never too late!
Ursula Germann, Zisis Gkatziofufas (Basel - Switzerland)
- 5184 T.027 Rapid healing with ReGeneraTing Agent (RGTA) of a refractory post surgical corneal ulcer
Aurélie Le*, Dorine Makhoul, François Willermain, Laurence Postelmans, Laure Caspers* (Bruxelles - Belgium)
- 5185 T.028 Kimura disease: familial and ocular occurrence
Denis Georgelin, Matthieu Robert, Marc Putterman, Dominique Gignac, Dominique Bremond-Gignac (Paris - France)

POSTERS

- 5189 T.029 Comparison between color light-emitting diode corneal topographer and Scheimpflug imager in measuring corneal astigmatism and corneal higher order aberrations
Yousook Hwang, Da Yeoung Kim, So-Hyang Chung (Seoul - South Korea)
- 5191 T.030 Hydrophilic polymers: interactions with lipid layers and ferning patterns
Petar Eftimov¹, Philippe Daull^{2*}, Georgi Georgiev^{1*} (¹Sofia - Bulgaria, ²Evry - France)
- 5202 T.032 Hsa-miR-150-5p regulates human corneal epithelial stem cells through Wnt signaling
Lavanya Kalaimani¹, Bharanidharan Devarajan², Venkatesh Prajna Namperumalsamy², Muthukkaruppan Veerappan², Julie T. Daniels¹, Gowri Priya Chidambaranathan² (¹London - United Kingdom, ²Madurai - India)
- 5216 T.033 Expression of factors related with lymph-/hem-angiogenesis in the cornea and conjunctiva during dry eye induction
Sang-Mok Lee¹, Dong Hyun Jo², hyoung Oh Jun², Byung Joo Lee², Seok Jae Lee², Chang Sik Cho², Mi Jeung Kim¹, Mingui Kong¹, Jeong Hun Kim² (¹Incheon - South Korea, ²Seoul - South Korea)
- 5229 T.034 Evaluation of the cytotoxic effects of ophthalmic solutions containing NSAID on corneal epithelium using an organotypic 3-D model
Irene Paterniti¹, Anna Rita Blanco², Anna Carannante², Emanuela Esposito¹, Salvatore Cuzzocrea¹ (¹Messina - Italy, ²Napoli - Italy)
- 5238 T.035 Post-DMEK bacterial interface keratitis treated with intrastromal and intracameral antibiotics
Lucas Lucas Janeschitz-Kriegl¹, Victoria Dimacali², Despoina Sagri², Hendrik Scholl¹, Zisis Gkatziofufas¹, Miltos Balidis² (¹Basel - Switzerland, ²Thessaloniki - Greece)
- 5249 T.036 Anti-apoptotic properties of mesenchymal stem cells in mouse model of corneal injury
Jan Kössl, Pavla Bohacova, Barbora Hermankova, Alena Zajicova, Vladimir Holan (Prague - Czech Republic)
- 5259 T.037 In vitro evaluation of cytotoxic potential associated to antimicrobial agents commonly used in clinical ophthalmological practice
Santa Viola, Giuseppe De Pasquale, Cristina Zappulla, Maria Cristina Curatolo, Maria Grazia Mazzone, Francesco Giuliano (Aci S. Antonio - Italy)
- 5273 T.038 Gonococcal conjunctivitis: a case report
Isabel Lopez Sangros, Sara Marco Monzón, Gisela Karlsruher Riegel, Paula Montes Rodriguez, Maria Dolores Diaz Barreda, Ana Boned Murillo, Maria de los Angeles Del Buey Sayas, Enrique Minguez Muro, Javier Ascaso Puyuelo (Zaragoza - Spain)
- 5281 T.039 Hyperlipidemia induces Meibomian gland dysfunction
Wei Li^{*}, Jinghua Bu, Yang Wu, Jingwen Yu, Xin He, Hui He, Yuli Guo, Mingjie Zhang, Zuguo Liu (Xiamen - China)
- 5292 T.040 Visual outcomes of descemet membrane endothelial keratoplasty at a single surgeon United Kingdom centre
Aleksandra Pekacka, Hammad Malik, Manisha Garella, Allon Barsam (Luton - United Kingdom)
- 5323 T.041 Case report: persistent corneal epithelial defect after glaucoma device implantation for radiation glaucoma
Daisuke Shimizu, Ayako Tawada, Shuichi Yamamoto (Chiba - Japan)
- 5338 T.042 Conjunctival oncocyctic adenocarcinoma of lacrimal gland origin
Syed Ahmed¹, Syed Shahid², Manuel Saldana¹ (¹Eastbourne - United Kingdom, ²London - United Kingdom)

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- 5345 T.043 Towards improved siRNA delivery to the corneal epithelium: exploring cationic amphiphilic drugs as siRNA delivery enhancers
Mike Wels, Félix Sauvage, Koen Raemdonck, Stefaan De Smedt (Ghent - Belgium)
- 5354 T.045 Protective effect of lipidure on ocular surface and soft contact lens against desiccation damage
Martina Cristaldi, Dario Rusciano, Melania Olivieri, Salvatore Pezzino, Gabriella Lupo, Carmelina Daniela Anfuso (Catania - Italy)
- 5356 T.046 Gabapentin modulates tear secretion via cAMP-PKA/CREB/AQP5 cascade
Melania Olivieri, Dario Rusciano, Martina Cristaldi, Salvatore Pezzino, Carmelina Daniela Anfuso, Gabriella Lupo (Catania - Italy)
- 5392 T.047 The effect of age on penetrating keratoplasty indications
Mine Karahan (Diyarbakir - Turkey)
- 5395 T.048 Giant squamous cell carcinoma of the conjunctiva: a clinical case report
Diogo Lopes, Tomás Loureiro, Rita Carreira, Sandra Barros, Inês Machado, Paul Campos, Nuno Campos (Lisboa - Portugal)
- 5405 T.049 The development of inflammatory eye diseases in patients with endocrine ophthalmopathy after the removal of restrictive strabismus
Galina Gladysheva (Novosibirsk - Russia)
- 5419 T.050 Clinical outcomes after intracorneal ring segment implantation for keratoconus management in corneas with apical haze
Aja Reinhold^{1*}, Georgios D. Panos², Aye Khine³, Mohamed Elalfy³, Samer Hamada³, Hendrik Scholl¹, Zisis Gkatziof¹ (¹Basel - Switzerland, ²London - United Kingdom, ³East Grinstead - United Kingdom)
- 5420 T.051 Cell based therapy for corneal endothelial regeneration
Sana Niazi, Azad Sanginabadi (Tehran - Iran)
- 5433 T.052 Significance of corneal rigidity at measuring of intraocular pressure
Iryna Shargorodska, Dzyana Dziameshka (Kyiv - Ukraine)
- 5435 T.053 Impact study of polarized light on the eye in a experimental model of dry eye disease
Iryna Shargorodska, Sergiy Rykov, Liubov Denysiuk, Anastasiia Liemienieva (Kyiv - Ukraine)
- 5436 T.054 Ocular surface evaluation using AS-OCT and in vivo confocal microscopy in patients with primary Sjögren's syndrome
Maria Elisa Luís, Joana Cardigos, Filipe Barcelos, Helena Carvalho, Diogo Hipólito, Sara Crisóstomo, José Vaz-Patto, Nuno Alves (Lisboa - Portugal)
- 5438 T.055 Contact lens wearers and dry eye symptoms. Ocular surface conditioning with Thealoz Duo
Assumpta Peral*, Elena Fernández, Elena Diz (Madrid - Spain)
- 5439 T.056 Basal neuro-immune interactions between resident dendritic cells and corneal sensory nerves
Laura Rincon-Frutos¹, Carolina Luna¹, M. Carmen Acosta¹, Carlos Belmonte¹, Pedram Hamrah², Yashar Seyed-Razavi², Juana Gallar^{1*} (¹Alicante - Spain, ²Boston - USA)
- 5442 T.057 Eyelid disorders highly prevalent in ophthalmology practice; results from a large international epidemiological study in eleven countries
Serge Doan¹, Zbigniew Zagorski², Jorge Palmares³, Meltem Yagmur⁴, Thomas Kaercher⁵, José Manuel Benitez Del Castillo⁶, Bart Van Dooren⁷, Paul Jonckheere⁸, Pk Jensen⁹, Dmitry Yurevich Maychuk¹⁰, Pavel Andreevich Bezditzko¹¹ (¹Paris - France, ²Nalenchuv - Poland, ³Porto - Portugal, ⁴Adana - Turkey, ⁵Heidelberg - Germany, ⁶Madrid - Spain, ⁷Rotterdam - The Netherlands, ⁸Deurne - Belgium, ⁹Copenhagen - Denmark, ¹⁰Moscow - Russia, ¹¹Kharkiv - Ukraine)

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- 5459 T.058 Contact lens and eye glass wearers with and without ocular symptoms: differences in corneal sensitivity, blinking, tearing and corneal surface temperature
José Ángel Pastor-Zaplana, Juana Gallar*, M. Carmen Acosta (Sant Joan d'Alacant - Spain)
- 5472 T.059 Refractory atypical corneal lesions with or without extension onto the conjunctiva responding to Acanthamoeba treatment
Pauline Dubois, Azzam Weiss, Zsuzsanna Valyi, Aurelie Le*, Kenza Bradly, François Willerman, Laure Caspers (Brussels - Belgium)
- 5060 T.060 Immune modulation following keratoplasty - Current and future aspects
Uwe Pleyer (Berlin - Germany)
- 5066 T.061 Comparison of anterior segment parameters between phakic and pseudophakic eyes of subjects with emmetropia and degenerative myopia
Mehmet Demir, Cetin Akpolat, Gurcan Dogukan Arslan, Yekta Sendul (Istanbul - Turkey)
- 5386 T.062 Investigation of tear protein composition in healthy and dry eye subjects using trapped ion mobility spectrometry coupled with quadrupole time of flight
Ioannis Kolman, Karima Kessal, Solenne Chardonnet, Stéphane Mélik Parsadaniantz, Christophe Baudouin, Françoise Brignole-Baudouin (Paris - France)
- 5148 T.063 Novel corneal crosslinking technique with eosin-Y and visible light
Erdost Yildiz, Muhammad Anwaar Nazeer, Betül Bayraktutar, Noushin Zibandeh, Seda Kizilel, Afsun Sahin (Istanbul - Turkey)



16:00-17:00



Poster Session ACB

Chairman: Anu Kauppinen (Kuopio - Finland), Goran Petrovski (Oslo - Norway)

- 5182 T.064 Changes in the expression of autophagy markers in a rat model of retinopathy of prematurity
rf Noemi Anna Pesce¹, Filippo Locri¹, Massimo Dal Monte¹, Helder André² (¹Pisa - Italy, ²Stockholm - Sweden)
- 5100 T.065 The role of hypoxia-inducible factors in age-related macular degeneration
rf Helder André (Stockholm - Sweden)
- 5425 T.066 Oxidative stress induces mitochondrial dysfunction and autophagy in ARPE-19 cells
rf Janusz Blasiak¹, Gabriela Barszczewska¹, Patrycja Gralewska¹, Kai Kaarniranta² (¹Lodz - Poland, ²Kuopio - Finland)
- 5107 T.067 NRF-2 and PGC-1 α signaling regulate epithelial-mesenchymal transition in mouse model
Szabolcs Felszeghy, Johanna Ruuth, Johanna Viiri, Juha Hyttinen, Ali Koskela, Kai Kaarniranta (Kuopio - Finland)
- 5150 T.068 Upregulation of the mu-opioid receptor in the cornea and trigeminal ganglion following corneal inflammatory pain
Adrián Guerrero Moreno, Fanny Joubert, Darine Fakh, Christophe Baudouin, Stéphane Mélik Parsadaniantz, Annabelle Réaux-Le Goazigo (Paris - France)

POSTERS

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Thursday

- 5155 T.069 3D morphometric study of the nasolacrimal duct and its implication in recanalization of nasolacrimal duct obstruction
Sohyun Lee, U-Young Lee, Won-Joon Lee, Dong-Ho Kim, Yong Seok Nam, In-Beom Kim, Yi-Suk Kim (Seoul - South Korea)
- 5158 T.070 Resvega alleviates oxidative stress and inflammasome activation in retinal pigment epithelial cells
Niina Bhattarai, Eveliina Korhonen, Maija Toppila, Kai Kaarniranta, Anu Kauppinen (Kuopio - Finland)
- 5166 T.071 Nanofibrous membranes reveal better properties for culturing of RPE cells in comparison with commercial scaffolds
Taras Ardan¹, Lucie Zemanova¹, Zdenka Ellederova¹, Saskia Drutovič¹, Hana Studenovská², Stepan Popelka², Katerina Kepkova-Vodickova¹, Sonali Rohiwal¹, Miroslava Sedlackova³, Jan Motlik¹ (¹Libechov - Czech Republic, ²Prague - Czech Republic, ³Brno - Czech Republic)
- 5265 T.072 Disease etiology-based design of multifunctional trehalose emulsion eye drops for moderate or severe dry eye: a randomised, quadruple-masked and active-controlled clinical trial
Kai Kaarniranta¹, Riikka Järvinen², Edward Wylegala³, Jarmo Laihia² (¹Kuopio - Finland, ²Katowice - Poland)
- 5270 T.073 Microglial analysis in whole-mount retina of Alzheimer's Disease 3xTg-AD mouse model
Ana I. Ramírez¹, Elena Salobar-García¹, Ana C. Rodrigues-Neves², Rosade Hoz¹, Juan J. Salazar¹, José A. Fernández-Albarral¹, Inés López-Cuenca¹, Pilar Rojas¹, Antonio F. Ambrósio², José M. Ramírez¹ (¹Madrid - Spain, ²Coimbra - Portugal)
- 5291 T.074 Cell-type specific insights into the pathobiology of advanced diabetic retinopathy using single-cell transcriptome analysis of the Akimba retina
Inge Van Hove*, Michaël Porcu, Lies De Groef, Tjing-Tjing Hu, Karen Beets, Tine Van Bergen, Bram Boeckx, Diether Lambrechts, Lieve Moons, Jean H.M. Feyen (Leuven - Belgium)
- 5263 T.075 The HuR/ELAVL1 expression is altered in Nrf2-deficient contexts
rf
Marialaura Amadio¹, Irene D'Angelo¹, Stefano Govoni¹, Szabolcs Felszeghy², Kai Kaarniranta² (¹Pavia - Italy, ²Kuopio - Finland)
- 5383 T.076 Pharmacological modulation of the VCP/ERAD/proteasome axis rescues photoreceptor degeneration in P23H rhodopsin
Merve Sen¹, Oksana Kutsyr², Sylvia Bolz¹, Tsui-Fen Chou³, Ray Deshaies^{4*}, Blanca Arango Gonzalez¹, Marius Ueffing¹ (¹Tuebingen - Germany, ²Alicante - Spain, ³Los Angeles - USA, ⁴Amgen - USA)
- 5400 T.077 Retinal oximetry as a biomarker in multiple sclerosis
Dragana Drobnyak Nes, Sigrid A. de Rodez Benavent, Pål Berg-Hansen, Einar A. Høgestøl, Mona K. Beyer, Dan A. Rinke, Nina Veiby, Vito Addoriso, Beata Eva, Elisabeth G. Celius, Hanne F. Harbo, Goran Petrovski (Oslo - Norway)
- 5466 T.078 Environmental light intensity determines the temporal progression of retinal degeneration in rd10 mice
Oksana Kutsyr, Xavier Sánchez-Sáez, Henar Albertos-Arranz, Victoria Maneu, Pedro Lax, Nicolás Cuenca (Alicante - Spain)
- 5481 T.079 Histology of myopic posterior scleral staphylomas
Jost Jonas^{1*}, Kyoko Ohno-Matsui², Leonard Holbach³, Songhomitra Panda-Jonas¹ (¹Mannheim - Germany, ²Tokyo - Japan, ³Erlangen - Germany)
- 5482 T.080 Choriocapillaris thickness and density in high myopia
Leonard Holbach¹, Jost Jonas^{2*}, Songhomitra Panda-Jonas² (¹Erlangen - Germany, ²Mannheim - Germany)
- 5329 T.081 Increased lipofuscin accumulation associated with disturbed mitophagy in NRF2/PGC1α double knockout mice
rf
Iswariyaraja Sridevi Gurubaran (Kuopio - Finland)

POSTERS

5231 T.082 Inhibition of adaptor proteins MAVS and TXNIP reduces inflammasome activation in RPE cells
rf
Sofia Ranta-Aho, Niina Bhattarai, Eveliina Korhonen, Niina Piippo, Maria Hytti, Kai Kaarniranta, Anu Kauppinen (Kuopio - Finland)

5102 T.083 Efficacy of Echinomycin in hypoxia-inducible factor-mediated ocular angiogenesis
rf TS
Flavia Plastino¹, Álvaro Santana Garrido², Monica Aronsson¹, Alfonso Mate Barrero², Anders Kvanta¹, Carmen Maria Vázquez Cueto², Helder André¹ (¹Stockholm - Sweden, ²Seville - Spain)

16:00-17:00

POS Poster Session PO

Chairman: **Steffen Heegard** (Copenhagen - Denmark), **Martine J. Jager** (Leiden - The Netherlands)

5069 T.084 Clinical & pathologic features of lacrimal ductal cyst
Hye Sun Choi, Jae Woo Jang, Sung Joo Kim, Ji Sun Baek (Seoul - South Korea)

5152 T.085 Mantle cell lymphoma: how not to be misled
Laura Schümmer¹, Virginie Ninclaus¹, Ineke Callebert², Helena Lantsoght¹, Kurt Geldhof², Hubert Vermeersch¹, Ilse De Schryver¹ (¹Ghent - Belgium, ²leper - Belgium)

5161 T.086 Orbital fibroblasts from thyroid-associated ophthalmopathy patients secrete IL-6 via up-regulation of IGF-1 by activating the NF-κB pathway
Jihyun Kim, Sung Eun Kim, Suk-Woo Yang (Seoul - South Korea)

5176 T.087 Optic nerve glioma - A case study
Udbuddha Dutta (Kolkata - India)

5280 T.088 Role of interferon alpha 2B (IFN-α2b) in the treatment of conjunctive squamous neoplasia
Maria Dolores Diaz, Ana Boned, Maria Angeles del Buey, Sara Marco, Isabel López, Gisela Karlsruher, Paula Montes, Francisco Javier Ascaso* (Zaragoza - Spain)

5282 T.089 Conjunctival lymphoma a case report
Ana Boned, Maria Dolores Diaz, Maria Angeles del Buey, Sara Marco, Isabel López, Gisela Karlsruher, Paula Montes, Francisco Javier Ascaso* (Zaragoza - Spain)

5299 T.090 Retrospective descriptive study on diagnosed patients of choroidal metastases
Paula Montes, Gisela Karlsruher, Ana Boned, María Dolores Díaz, Sara Marco, Isabel López, Diana Pérez, Francisco Javier Ascaso* (Zaragoza - Spain)

5358 T.091 Slow Mohs surgery for the treatment of periocular basal cell carcinomas, three and five year follow-up
Richard Thornton, Sarith Makuloluwe, Simon Rogers, Hunter Maclean (Portsmouth - United Kingdom)

5393 T.092 Digital carcinoma of a sweat gland metastasizing to the lacrimal gland: report of a rare case
Simon Philips¹, Jayant Jadnanansing², Nerea Fordel¹, Andreas Vanclooster¹, Kurt Geldhof², Ilse De Schryver¹ (¹Ghent - Belgium, ²leper - Belgium)

5424 T.093 A historical form of adenoid cystic carcinoma orbital: about a case
Rhizlane Abdi, Siham Chariba, Asmae Maadane, Rachid Sekhsoukh (Oujda - Morocco)

5429 T.094 Using 3D simulation in reconstructive-rehabilitation surgery in patients with defects in orbital walls
Oksana Petrenko, Olha Prusak (Kyiv - Ukraine)

5447 T.095 Recurrent pyogenic granuloma (lobular capillary haemangioma) of the eyelid in a breast-feeding patient
Nyaish Mansoor (Burton Upon Trent - United Kingdom)

POSTERS

- 5473 T.096 Unilateral unifocal advanced intraocular retinoblastoma: is reasonable to adopt intra-arterial chemotherapy as single therapeutic choice?
Sonia De Francesco¹, Sara Leonini², Paolo Galluzzi², Sandra Bracco², Paola Gennari², Anna Maria Pinto², Giovanni Neri², Matteo Barchitta², Alessandra Renieri², Doris Hadjistilianou² (1Castelnuovo Berardenga - Italy, 2Siena - Italy)
- 5217 T.097 Investigating basal cell carcinoma recurrence and outcomes following surgical excision at Broomfield Hospital Ophthalmology Department, United Kingdom
Caroline Wong, Seyed Ghazi-Nouri, V. Kesharaju (Chelmsford - United Kingdom)
- 5298 T.098 A case of choroidal osteoma in a 5-year-old child
Gisela Karlsruher, Paula Montes, Sara Marco, Isabel López, María Dolores Díaz, Ana Boned, Patricia Ramiro, Francisco Javier Ascaso* (Zaragoza - Spain)
- 5458 T.099 Germline variants in the MBD4 gene are rare in patients with uveal melanoma
Pauliina Repo, Johannes Jääntti, Reetta-Stiina Järvinen, Martin Täll, Virpi Raivio, Tero Kivelä, Joni Turunen* (Helsinki - Finland)



Thursday
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POSTERS

14:45-15:45


Poster Session RV

Chairmen: **Vasilios Papastefanou** (London - United Kingdom), **Tina Xirou** (Athens - Greece)

- 5212 F.001 Subthreshold laser compared to spironolactone in treatment of chronic central serous retinopathy
rf
Stefano Mercuri, Paolo Corazza, Nancy Khairat, Saad Younis (London - United Kingdom)
- 5122 F.002 Fluocinolone acetonide for the treatment of chronic diabetic macular edema: an Italian real world experience
rf 
Piero Zollet, Luigi Capone, Rosangela Lattanzio, Francesco Bandello (Milan - Italy)
- 5094 F.003 Efficacy and safety of resvega in diabetic macular edema: preliminary results of a pilot study
rf
Irini Chatziralli, Eleni Dimitriou, Alexandros Chatzirallis, Evaggelia Aissopou, Panagiotis Theodossiadis (Athens - Greece)
- 5391 F.004 Automatic classification and triage of diabetic retinopathy from retinal images based on a convolutional neural networks (CNN) method
rf
Adrian Galdran¹, Hadi Chakor², Abdulaziz A. Alrushood³, Ryad Kobbi², Argyrios Christodoulidis², Jihed Chelbi², Marc-André Racine², Ismail Benayed¹ (¹Montreal - Canada, ²Brossard - Canada, ³Dammam - Saudi Arabia)
- 5428 F.005 Do macular OCT-A measures correlate with functional outcomes in diabetic patients?
rf
Georgios Bontzos, Christina Garnavou-Xirou, Tina Xirou, Ilias Gkizis, Stamatina Kabanarou, Irini Chatziralli (Athens - Greece)
- 5312 F.006 Treatment of macular holes with topical drop regimen
rf
Dimitra Skondra (Chicago - USA)
- 5369 F.007 In situ forming hydrogel for sustained intraocular drug delivery
rf
Blessing C. Ilochonwu^{1*}, Marko Mihajlovic¹, Miao Tang², Mei Chen², Wim E. Hennink¹, Tina Vermonden¹ (¹Utrecht - The Netherlands, ²Belfast - United Kingdom)
- 5143 F.008 Age-related changes in flicker sensitivity with rod- and cone-enhanced stimuli
rf
Amithavikram R. Hathibelagal¹, Shrikant R. Bharadwaj¹, Ahalya Subramanian², James Sadler³, John L. Barbur^{2*} (¹Hyderabad - India, ²London - United Kingdom, ³Hampshire - United Kingdom)
- 5177 F.009 Retinal neurodegeneration in systemic Lupus erythematosus: layer by layer retinal study using optical coherence tomography
rf
Arnaldo Dias-Santos¹, Joana Ferreira¹, Sofia Pinheiro¹, João Paulo Cunha¹, Marta Alves¹, Ana Luísa Papoila¹, Maria Francisca Moraes-Fontes¹, Rui Proença² (¹Lisbon - Portugal, ²Coimbra - Portugal)
- 5046 F.010 Longitudinal changes in peripapillary retinal nerve fiber layer thickness in hypertension
Jung Yeul Kim (Daejeon - South Korea)
- 5049 F.011 Pattern-stimulation in the complex management of patients with operated retinal detachment
Tamara Kazanskaya (Krasnoyarsk - Russia)
- 5052 F.012 Longitudinal changes in the ganglion cell – inner plexus layer thickness in hypertension: a prospective observational study
Woo Hyuk Lee, Hyung-Bin Lim, Yong-Il Shin, Jung-Yeul Kim (Daejeon - South Korea)
- 5058 F.013 Enhanced visualization of retinal vasculature using image processing
Do-Hyun Jung, Yun Taek Kim (Chungnam - South Korea)

POSTERS

- 5070 F.014 Microvascular abnormalities in diabetic patients without diabetic retinopathy: Contribution of optical coherence tomography angiography
Houda Lajmi, Amal Ben Othmen, Amin Zahaf, Racem Choura, Wassim Hmaied (Tunis - Tunisia)
- 5081 F.015 Required stage dependent therapy in coats disease
Claudia Brockmann, B. Müller, S. Schönfeld, S. Winterhalter, O. Zeitz, Antonia M. Jousen (Berlin - Germany)
- 5091 F.016 Long-term clinical course after vitrectomy for breakthrough vitreous hemorrhage secondary to neovascular age-related macular degeneration
Chulgu Kim (Seoul - South Korea)
- 5096 F.017 Diffuse unilateral subacute neuroretinitis in South Korea: a case report
Moon Jeong Choi (Seoul - South Korea)
- 5129 F.018 Age-related macular degeneration patients present with high incidence of undiagnosed and untreated depression
Ioanna Mylona, Ioannis Tsinopoulos (Thessaloniki - Greece)
- 5134 F.019 Segmentation errors in OCT-angiography associated with epiretinal membranes
Tina Xirou, Georgios Bontzos, Christina Garnavou-Xirou, Eugenia Kontou, Ilias Gkizis, Stamatina Kabanarou (Athens - Greece)
- 5139 F.020 Evolution of AMD drusenoid deposits lipid type "L": Density, structure, volume, complications study
Corinne Gonzalez (Toulouse - France)
- 5141 F.021 Evolution of AMD drusenoid deposits protein-cellular type "P": density, structure, volume, complications study
Corinne Gonzalez (Toulouse - France)
- 5171 F.022 Influence of mitochondrial haplogroups in response to ranibizumab therapy in neovascular age-related macular degeneration
Olivia Esteban, F. Javier Ascaso*, Isabel Lopez, Sara Marco, Paula Montes, Gisela Karlsruher, Eduardo Ruiz-Pesini (Zaragoza - Spain)
- 5183 F.023 Subclinical choroidopathy in systemic Lupus erythematosus
Arnaldo Dias-Santos¹, Joana Ferreira¹, Sofia Pinheiro¹, João Paulo Cunha¹, Marta Alves¹, Ana Luísa Papoila¹, Maria Francisca Moraes-Fontes¹, Rui Proença² (¹Lisbon - Portugal, ²Coimbra - Portugal)
- 5188 F.024 Relationship between mean transit time of retina and various hemodynamic factors using automatic image analysis technique and high speed fluorescein angiography
So Hee Kim¹, Ji Eun Lee¹, Hanjo Kwon² (¹Busan - South Korea, ²Yangsan - South Korea)
- 5205 F.025 Effect of intravitreal bevacizumab injection in central serous chorioretinopathy
Seok Hyeon Song, Seung Kook Baek, Young Suk Chang, Jung Suk Yoon (Daejeon - South Korea)
- 5208 F.026 Clinical results according to cause of endophthalmitis
Seok Hyeon Song, Seung Kook Baek, Young Suk Chang, Jung Suk Yoon (Daejeon - South Korea)
- 5224 F.027 Long-term observation of the treatment of laser photocoagulation versus Intravitreal Bevacizumab in identical twins with aggressive posterior retinopathy of prematurity
Seung Hee Jeon, Young Jung Roh (Seoul - South Korea)

POSTERS

- 5236 F.028 Prevalence of diabetic retinopathy in rural region of the Mongolia
Dovchinjamts Dagvadorj, Uranchimeg Davaatseren (Ulaanbaatar - Mongolia)
- 5247 F.029 Improvements of retinal sensitivity, visual acuity, and central retinal thickness after intravitreal injection of aflibercept in patients with wet age-related macular degeneration
Tomohiro Nizawa, Masayasu Kitahashi, Takayuki Baba, Takehito Iwase, Mariko Kubota, Yoko Hattori, Yohei Kawasaki, Takayuki Iwase, Takatoshi Sato, Shoko Ogawa, Takeshi Sugawara, Shuichi Yamamoto (Chiba - Japan)
- 5255 F.030 Circadian control and pinosylvin treatment in the disease model of age-related macular degeneration
Toni Tamminen¹, Ali Koskela¹, Elisa Toropainen¹, Marja Pitkänen², Johanna Viiri¹, Jussi Paterno¹, Anne Seppänen¹, Ari Koskelainen², Kai Kaarniranta¹ (¹Kuopio - Finland, ²Espoo - Finland)
- 5257 F.031 Efficacy and safety of anti-vascular endothelial growth factor therapy for diabetic macular edema in Mongolians
Toishubai Anaraa (Ulaanbaatar - Mongolia)
- 5260 F.032 Long-term visual function in patients treated for retinopathy of prematurity (ROP) in the UK
Melanie Almonte, Edmund Schulenburg (London - United Kingdom)
- 5261 F.033 Quantification of Bruch's membrane calcification in Pseudoxanthoma elasticum: a proof-of-concept study using SD-OCT
Sara Risseeuw, Edwin Bennink, Maarten Poirot, Saskia Imhof, Redmer van Leeuwen, Jeanette Ossewaarde - van Norel (Utrecht - The Netherlands)
- 5271 F.034 Study about the association between diabetic macular edema and avascular foveal area, diameter and thickness of the superficial and deep retinal plexuses
Paula Montes, Gisela Karlsruher, Ana Boned, María Dolores Díaz, Sara Marco, Isabel López, Olivia Esteban, Francisco Javier Ascaso* (Zaragoza - Spain)
- 5272 F.035 Structural pathology after retinal detachment repair on multicolor imaging
Vilde Thomseth, David Engelsen, Vegard Forsaa (Stavanger - Norway)
- 5285 F.036 A step towards pigmentation independent retinal vessel oximetry
Katrin Hirsch, Rebekka Heitmar, Robert P. Cubbidge (Birmingham - United Kingdom)
- 5301 F.037 Performance evaluation of 25 Gauge 20,000 cpm vitrectomy probes: vitreous flow rates
Ying Zhu*, Dina Abulon* (Lake Forest - USA)
- 5302 F.038 25-gauge fluid flow with 20,000 cpm dual-pneumatic probes
Ying Zhu*, Dina Abulon* (Lake Forest - USA)
- 5305 F.039 Clinical characteristics, prognostic factors, and visual outcomes in patients with penetrating ocular trauma and intraocular foreign bodies
Munkhsaikhan Munkhkhuyag (Ulaanbaatar - Mongolia)
- 5306 F.040 Vitreous traction comparison of 27 gauge probes: dual-cutting vs single-cutting
Dina Abulon* (Lake Forest - USA)
- 5307 F.041 Vitreous flow rates of 27 gauge dual-cutting 20,000 cpm vitrectomy probes
Dina Abulon*, Ying Zhu* (Lake Forest - USA)
- 5319 F.043 Analysis of microstructural changes of the retina at different localization of the optic nerve head drusen
Elena Ioyleva, Evgenya Kabanova, Aleksandra Zinov'eva (Moscow - Russia)

POSTERS

- 5344 F.044 Do patients receiving laser treatment for sight threatening diabetic retinopathy and those under the care of a consultant led multidisciplinary diabetes specialist team have better HbA1c value than those that are not under a diabetes specialist?
Syed Ahmed¹, Syed Shahid², Sita Parmar¹, Shahram Kashani¹ (¹Eastbourne - United Kingdom, ²London - United Kingdom)
- 5357 F.045 Investigating the role of Gli1 in the development of choroidal neovascularisation
Stephen Marry, Heping Xu, Mei Chen (Belfast - United Kingdom)
- 5394 F.046 Vasoproliferative retina tumors and epiretinal membranes
Efstratios Paroikakis, George Batsos, Elisavet Ktena, Loukas Kontomichos, Alexandros Chatzirallis, Dimitrios Karagiannis (Athens - Greece)
- 5417 F.047 High myopia in acromegaly: what do we know?
Besma Ben Achour, Racem Choura, Amine Zahaf, Wassim Hmaied (Tunis - Tunisia)
- 5427 F.048 Bilateral anterior ischaemic optic neuropathy with macular star as first manifestation of Henoch-Schönlein purpura (IgA vasculitis)
Evgenia Kontou, Georgios Bontzos, Antonis Ragkousis, Evangelos Gkoumas, Dionysios Triantafyllou, Penelope Bitza, Tina Xirou (Athens - Greece)
- 5467 F.049 Retinal thickness of the triple-transgenic mice model of Alzheimer's disease at the age of one month
Rui Bernardes¹, Hugo Ferreira¹, João Martins¹, Paula I Moreira¹, Miguel Castelo-Branco¹, António F. Ambrósio¹, Pedro Serranho² (¹Coimbra - Portugal, ²Lisboa - Portugal)
- 5483 F.050 Length and width of the peripapillary scleral flange in relation to axial length
Shefali Jonas, Songhomitra Panda-Jonas, Jost Jonas* (Mannheim - Germany)
- 5486 F.051 Corneal refractive surgery and the risk of retinal detachment
Piotr Kanclerz¹, Andrzej Grzybowski² (¹Gdansk - Poland, ²Olsztyn - Poland)
- 5065 F.052 Evaluation of follow-up period and the results of the surgical approach in patients with vitreous hemorrhage
Mehmet Demir, Cetin Akpolat, Murat Karapapak, Egemen Karatas (Istanbul - Turkey)
- 5078 F.053 A pilot autonomous AI-based DR screening in Poland
Andrzej Grzybowski¹, Piotr Brona² (¹Olsztyn - Poland, ²Poznan - Poland)
- 5380 F.054 Synthesis and application of magnetic nanoparticles (MNPs) in drug delivery to the retina
Marco Bassetto (Marseille - France)
- 5289 F.055 Diabetic retinopathy outcomes in patients undergoing pancreatic transplants in West London
Maja Szymanska, Timothy Yap, Eduardo Normando, M. Francesca Cordeiro* (London - United Kingdom)
- 5422 F.056 Photo-ablation of human vitreous opacities by light-induced vapor nanobubbles
Félix Sauvage¹, Juan Fraire¹, Katrien Remaut¹, J. Sebag², Karen Peynshaert¹, Frans Van de Velde³, Ranhua Xiong¹, Marie-José Tassignon⁴, Toon Brans¹, Kevin Braeckmans¹, Stefaan De Smedt¹ (¹Ghent - Belgium, ²Huntington Beach - USA, ³Boston - USA, ⁴Antwerp - Belgium)



POSTERS

14:45-15:45



Poster Session IM

Chairmen: **Uwe Pleyer** (Berlin - Germany), **Luc Van Os** (Edegem - Belgium)

- 5326 F.057 EYS606 for the treatment of non-infectious uveitis
rf **Florence Hoogewoud, Ronald Buggage, Francine Behar-Cohen*** (Paris - France)
- 5264 F.058 Involvement of Innate Immunity in the course of choroidal neovascularization in Mice
Despina Kokona*, Ioanna Tsioti*, Petra Schwarzer*, Martin S. Zinkernagel (Bern - Switzerland)
- 5042 F.059 Efficacy of an ophthalmic fixed combination of tetracycline, chloramphenicol and colistin on planktonic growth and preformed biofilm
Anna Rita Blanco¹, Antonia Nostro², Manuela D' Arrigo², Andreana Marino² (¹Casoria - Italy, ²Messina - Italy)
- 5059 F.060 Comparison of in vitro assays to study the effectiveness of antiparasitics against *Acanthamoeba castellanii* trophozoites and cysts
Lei Shi¹, Tanja Stachon¹, Lorenz Latta¹, Mohamed Ibrahim Elhawy¹, Erika Orosz², Albrecht F. Kiderlen³, Berthold Seitz¹, Marukus Bischoff¹, Nóra Szentmáry¹ (¹Homburg/Saar - Germany, ²Budapest - Hungary, ³Berlin - Germany)
- 5082 F.061 Probiotic bacteria *Escherichia coli* Nissle decrease the severity of intraocular inflammation in experimental autoimmune uveitis
Otakar Dusek¹, Petra Svozilkova¹, Aneta Klimova¹, Michaela Brichova¹, Miloslav Kverka¹, Helena Tlaskalova-Hogenova¹, Alena Fajstova¹, Stepan Coufal¹, Tomas Hrnčíř², Tomas Kucera¹, Jarmila Heissigerova¹ (¹Prague - Czech Republic, ²Prague - Czech Republic)
- 5106 F.062 In vitro evaluation of antibacterial activity of fluorescein 0.5% eye drops
Thibaud Bouche, Jean Claude Quintyn, Olivier Join Lambert, Francois Guerin, Michel Auzou (Caen - France)
- 5222 F.063 Short-term results of clinical monitoring of biosimilar infliximab in non-infectious uveitis
Marie Mortelé¹, Augustijn Mortelé¹, Steven Vervaeke², Gert Deschoenmakers¹, Ilse De Schryver¹ (¹Ghent - Belgium, ²Roeselare - Belgium)
- 5377 F.064 cGAS-STING pathway activation in murine retina
Miao Tang, Sofia Pavlou, Mei Chen, Heping Xu (Belfast - United Kingdom)
- 5387 F.065 Clinical impact of drug monitoring in non-infectious uveitis treated with adalimumab
Augustijn Mortelé¹, Marie Mortelé¹, Arnaud Potvin¹, Ilse De Schryver² (¹Ghent - Belgium, ²Roeselare - Belgium)
- 5452 F.066 Clinical spectrum of atypical ocular toxoplasma chorioretinitis
Ester Carreño*, Tomas Burke, Zain Amir, Thomas Hickman Casey, Richard Lee, Andrew Dick, Adam Ross (Bristol - United Kingdom)
- 5479 F.067 Uveitis and immune checkpoint inhibition: when a blockage isn't just a blockage
Arnaud Potvin¹, Sylvie Rottey¹, Kurt Geldhof², Ingel Demedts³, Julie De Zaeytjij¹, Ilse De Schryver¹ (¹Gent - Belgium, ²Leper - Belgium, ³Roeselare - Belgium)
- 5303 F.068 Review of endogenous endophthalmitis in a tertiary eye centre; can we spot the trends?
rf *TS* **Namita Mathews, Robery J. Barry, Gibran F. Butt** (Birmingham - United Kingdom)

POSTERS

14:45-15:45


Poster Session LC

Chairmen: **Justin Christopher D'Antin** (Barcelona - Spain), **Timo Eppig** (Schnaittach - Germany)

- 5487 F.069 Refraction in eyes filled with silicone oil
rf **Piotr Kanclerz¹, Andrzej Grzybowski², Christoph Leisser³, Pawel Lipowski¹** (1Gdansk - Poland, ²Olsztyn - Poland, ³Vienna - Austria)
- 5355 F.070 The Influence of stereopsis on ability to perform simulated cataract surgery
rf **Andrew Tatham*, James Dutton, Alice Watkins, Baljean Dhillon** (Edinburgh - United Kingdom)
- 5190 F.071 Risk of corneal transplantation after phacoemulsification in patients with cornea guttata
rf **Andreas Viberg¹, Branka Samolov², Margareta Claesson Armitage³, Anders Behndig¹, Berit ystr** (¹Umeå - Sweden, ²Stockholm - Sweden, ³Gothenburg - Sweden)
- 5041 F.072 Estimation of the variance components in TP53 mRNA expression in the rat lens after in vivo exposure to UVR-B
Konstantin Galichanin (Uppsala - Sweden)
- 5127 F.073 Dose-dependent density change of lens epithelial cells after in vivo UVR exposure
Zhaohua Yu, Nooshin Talebizadeh, Per Söderberg (Uppsala - Sweden)
- 5187 F.074 An evaluation of complication rates in patients undergoing the unconventional "standing" phacoemulsification procedure
Namita Mathews, Samuel Ebbs, Mazen Tahhan (Birmingham - United Kingdom)
- 5243 F.075 Evaluation of the results and techniques of cataract phacoemulsification in uncomplicated and complicated cases on various femtolasers installations
Konstantin Malgin (Orenburg - Russia)
- 5245 F.076 Ultrasound biomicroscopy of the anterior segment of the eyeball after implantation of a phakic IOL in patients with different refractive errors
Konstantin Malgin (Orenburg - Russia)
- 5275 F.077 Cyclodialysis cleft as a complication of cataract surgery: a case report
Isabel Lopez Sangros, Sara Marco Monzón, Gisela Karlsruher Riegel, Paula Montes Rodriguez, Maria Dolores Diaz Barreda, Ana Boned Murillo, Juana Martinez Morales, Maria de los Angeles Del Buey Sayas, Javier Ascaso Puyuelo (Zaragoza - Spain)
- 5297 F.078 Characterization of cataract patients' lens epithelial cells by using synchrotron based FTIR
Sofija Andjelic¹, Martin Kreuzer², Tanja Dučić², Marko Hawlina¹ (¹Ljubljana - Slovenia, ²Barcelona - Spain)
- 5359 F.079 Substance P receptor antagonists fosaprepitant and spantide in an UVR-B-induced cataract mouse model
Alfred Wegener¹, Martin Kronschläger², Carl-Ludwig Schönfeld³, Frank Holz^{1*}, Linda Meyer³, Janine Gross¹ (¹Bonn - Germany, ²Vienna - Austria, ³Munich - Germany)
- 5450 F.080 Cataract and retinal necrosis caused by Naja nigricollis spitting cobra during humanitarian ophthalmology mission in Côte d'Ivoire: a case report
Matteo Posarelli¹, Arianna Desideri², Patrizio Meuzzi³, Giordano Fanton², Claudio Bondi³, Martina Melucci⁴ (¹Siena - Italy, ²Biella - Italy, ³Tarquina - Italy, ⁴Milan - Italy)
- 5093 F.081 The light sword lens and its usefulness for presbyopia reduction
Krzysztof Petelczyc, Michal Miler, Narcyz Blocki, Katarzyna Kolacz, Zbigniew Jaroszewicz, Karol Kakarenko, Andrzej Kolodziejczyk, Marek Rekas (Warsaw - Poland)

POSTERS

14:45-15:45



Poster Session MBGE

Chairmen: **Amanda-Jayne Carr** (London - United Kingdom), **Nikolas Pontikos** (London - United Kingdom)

- 5165 F.082 Genetic analysis of pseudoexfoliation glaucoma risk in an Irish population
rf Sarah Eivers, Alison Greene, Edward Dervan, Colm O'Brien, Deborah Wallace (Dublin - Ireland)
- 5376 F.084 Activating mutations in discoidin domain receptor 2 cause Warburg-Cinotti Syndrome
rf Linda Zi Yan Xu¹, Hanne Jensen², Jennifer J. Johnston³, Emilio Di Maria⁴, Katja Kloth⁵, Ileana Cristea¹, Julie C. Sapp³, Thomas N. Darling³, Laryssa A. Huryn³, Lisbeth Tranebjærg², Elisa Cinotti⁶, Christian Kubisch⁵, Eyvind Rødahl¹, Ove Bruland¹, Leslie G. Biesecker³, Gunnar Houge¹, Cecilie Bredrup¹ (¹Bergen - Norway, ²Glostrup - Denmark, ³Bethesda - USA, ⁴Genoa - Italy, ⁵Hamburg - Germany, ⁶Siena - Italy)
- 5365 F.085 Familial aniridia spectrum in four families of Czech origin with PAX6 mutations
rf Jana Moravikova, Lubica Dudakova, Zbynek Kozmik, Pavlina Skalicka, Petra Liskova (Prague - Czech Republic)
- 5068 F.086 The distribution of Keratometry in a population based study
Abbas Ali Yekta¹, Mehdi Khabazkhoob², Hassan Hashemi², Hadi Ostadimoghaddam¹, Samira Heydari³, Javad Heravian Shandiz¹ (¹Mashhad - Iran, ²Tehran - Iran, ³Sari - Iran)
- 5092 F.087 Predictive value of screening tests for sight-threatening eye disease in a UK population
John Lawrenson¹, Bruno Fidalgo¹, Priya Dabasia¹, Anish Jindal¹, David Edgar¹, Irene Ctori¹, Tunde Peto² (¹London - United Kingdom, ²Belfast - United Kingdom)
- 5140 F.088 Observational study of magnitude of ocular manifestations of rheumatoid arthritis in a tertiary care hospital in East India
Udbuddha Dutta (Kolkata - India)
- 5317 F.089 Individual characters affected by cataract in the riverside population of the Tapajós River, in Pará
Lais Raphaelli Caramel, Giovanna Oncala Simão, Alexandre Scramin Czezacki, Vanessa Giffoni Braga Mont'Alvão, Jhenifer Nataly Moura França, Luísa da Cunha Gobbo, Bruna Albertini Reis, Isabella Soares Ricioli, Gustavo de Campos Olavarria, Marianne Benedicto de Souza, Otto Albuquerque Beckedorff, Rebecca de Souza Pizzato, Thiago José Delfraro Carmo, Fabiana Moreira Passos Succi, Luíza Abreu Minussi, Elvira Barbosa Abreu (Campinas - Brazil)
- 5343 F.090 Microfibrillar-associated protein 4 promotes retinal cell activation
Bartosz Pilecki¹, Sofie Skallerup¹, Anders Schlosser¹, Andrew Benest², Claire Allen², Uffe Holmskov¹, David Bates², Grith Sorensen¹ (¹Odense - Denmark, ²Nottingham - United Kingdom)
- 5385 F.091 The role of TGF- β 1 on RHO GTPase, GSK3, JNK, MMP-2, -catenin and -SMA expression in myofibroblast cell culture orbital socket contracture
Debby Shintiya Dewi (Malang - Indonesia)
- 5423 F.092 Design of a novel low vision questionnaire to evaluate the quality of life and independence
Stavroula Almpnidou*, Diamantis Almiotis, Georgios Labiris, Fotios Topouzis, Theodoros Dardavesis, Vasileios Karamatakis (Thessaloniki - Greece)
- 5361 F.093 A conditional Mitf mouse model of geographic atrophy (GA)
rf *TS* Andrea García Llorca¹, Alba Sabaté¹, Margrét Helga Ögmundsdóttir¹, Lionel Larue², Fra Gesbert², Eiríkur Steingrímsson¹, Thor Eysteinnsson¹ (¹Reykjavík - Iceland, ²Orsay - France)

POSTERS

14:45-15:45

POS Poster Session PBP

Chairmen: **Gerhard Garhöfer** (Vienna - Austria), **Neville N. Osborne** (Oxford - United Kingdom)

- 5063 F.094 The potent integrin antagonist THR-687 is a promising next-generation drug candidate for the treatment of multifactorial retinal diseases
rf **Tjing-Tjing Hu***, **Tine Van Bergen**, **Isabelle Etienne**, **Jean H.M. Feyen**, **Elke Vermassen** (Heverlee-Leuven - Belgium)
- 5114 F.095 Cord blood serum (CBS) reduces the expression of GFAP and inflammatory cytokines in retinal Muller cells under stress damage
rf **Carmen Ciavarella¹**, **Marina Buzzi¹**, **Elisa Bergantini¹**, **Chiara Coslovi¹**, **Stefano Di Marco²**, **Silvia Bisti²**, **Emilio Campos²**, **Piera Versura²** (¹Bologna - Italy, ²L'Aquila - Italy)
- 5199 F.096 Study of the functional integrity of the retinal pigment epithelium with a new technique in two models of inherited retinal degeneration
rf **Johnny Di Pierdomenico**, **Francisco Javier Valiente Soriano**, **Manuel Salinas Navarro**, **Diego García-Ayuso**, **María Paz Villegas-Pérez**, **Manuel Vidal-Sanz**, **Marta Agudo-Barriuso** (Murcia - Spain)
- 5251 F.097 Small molecule innate immune inhibitors to enhance synthetic mRNA translation for ocular delivery
rf **An-Katrien Minnaert**, **Joke Devoldere**, **Karen Peynshaert**, **Stefaan De Smedt**, **Katrien Remaut** (Gent - Belgium)
- 5309 F.098 Different rate of retinal degenerations in mice with two distinct mutations in the Mitf gene
rf **Thor Eysteinnsson**, **Ingunn Jónasdóttir**, **Andrea García-Llorca**, **Thorunn Björg Gudmundsdóttir**, **Margrét Helga Ögmundsdóttir**, **Eiríkur Steingrímsson** (Reykjavik - Iceland)
- 5328 F.099 Pharmacokinetics of angiotensin-receptor blocker in cyclodextrin nanoparticle eye drops in rabbits
rf **Martin Kallab¹**, **Kornelia Schützenberger¹**, **Nikolaus Hommer¹**, **Bhavapriya Jasmin Schäfer¹**, **Aimin Tan²**, **Phatsawee Jansook³**, **Einar Stefansson^{4*}**, **Gerhard Garhöfer^{1*}** (¹Vienna - Austria, ²Toronto - Canada, ³Bangkok - Thailand, ⁴Reykjavik - Iceland)
- 5340 F.100 Unilateral optic nerve axotomy in pigmented mice causes RGCs loss in the contralateral uninjured retina that is prevented by microglial inhibition
rf **Fernando Lucas Ruiz**, **Caridad Galindo-Romero**, **Kristy Tatiana Rodríguez-Ramírez**, **Manuel Vidal-Sanz**, **Marta Agudo-Barriuso** (Murcia - Spain)
- 5411 F.101 Safety and effects of intravitreal or subretinal injections of human bone marrow-derived mononuclear cells to P23H-1 and RCS rats
rf **Johnny Di Pierdomenico**, **María Elena Rodríguez González-Herrero**, **Miguel Blanquer Blanquer**, **Diego García Ayuso**, **Marta Agudo Barriuso**, **Manuel Vidal Sanz**, **María Paz Villegas Pérez** (Murcia - Spain)
- 5416 F.102 A model of focal light emitting diode-induced photoreceptor degeneration in pigmented mice
rf **Juan Antonio Miralles de Imperial-Ollero**, **Johnny Di Pierdomenico**, **Jose Bernal-Garro**, **María Paz Villegas-Pérez**, **Francisco Javier Valiente-Soriano**, **Manuel Vidal-Sanz** (Murcia - Spain)
- 5463 F.103 Improvement and validation of high precision ocular oximetry using a convolutional neural network algorithm and a phantom eye
rf **Joannie Desroches***, **Damon DePaoli**, **Nicolas Lapointe**, **Catherine Paulin**, **Prudencio Tossou**, **Patrick Sauvageau**, **Dominic Sauvageau**, **Daniel Côté** (Québec - Canada)

POSTERS

- 5117 F.104 Retinal vessel oximetry as a sensitive metabolic monitoring method for transcorneal electrical stimulation in retinitis pigmentosa
Maria della Volpe Waizel¹, Hanna Zuche¹, Ursula Müller¹, Hendrik P.N. Scholl¹, Margarita G. Todorova² (¹Basel - Switzerland, ²St. Gallen - Switzerland)
- 5126 F.105 The effect of preservative free hydrocortisone 0.335% eye drops on tear film thickness in patients with moderate to severe dry eye disease
Doreen Schmidl^{1*}, Martin Kallab¹, Nikolaus Hommer¹, Stephan Szegedi¹, Hannes Stegmann^{1*}, René Werkmeister¹, Leopold Schmetterer^{2*}, Gerhard Garhöfer^{1*} (¹Vienna - Austria, ²Singapore - Singapore)
- 5128 F.106 The investigation of endothelial nitric oxide synthase (eNOS) activation in retinopathy
Takeshi Ninchoji, Dominic Love, Ross Smith, Lena Claesson-Welsh (Uppsala - Sweden)
- 5147 F.107 The effect of tetrahydrocannabinol on optic nerve head blood flow in healthy subjects
Nikolaus Hommer, Martin Kallab, Stephan Szegedi, Stefan Puchner, Martin Bauer, René Werkmeister, Leopold Schmetterer^{*}, Marihan Abensperg-Traun, Gerhard Garhöfer^{*}, Doreen Schmidl^{*} (Vienna - Austria)
- *
5159 F.108 Protein cages modified for oligonucleotide delivery to retinal cells
Chiara Pretto, Jan van Hest (Eindhoven - The Netherlands)
- 5206 F.109 Identifying risk factors for severity & activity of graves orbitopathy - a multi-centre analysis of the characteristics and treatment of patients with thyroid eye disease
Soma Farag, Claire Feeney, Vickie Lee, Rashmi Akishar, Sonali Nagendran, Rajni Jain, Ahmad Aziz, Stephen Robinson, Karim Meeran, Vassiliki Bravis (London - United Kingdom)
- 5225 F.110 Intravitreal kinetics of macromolecules in rats and rabbits: evaluation with ocular fluorophotometry
Amir Sadeghi, Elisa Toropainen, Annika Valtari, Jooseppi Puranen, Marika Ruponen, Veli-Pekka Ranta, Arto Urtti^{*} (Kuopio - Finland)
- 5235 F.111 The inhibitory effect of D2 dopaminergic agonists on VEGF and VEGF-R genes expression and blood vessels formation
Maciej Oseka¹, Anna Swiech-Zubilewicz², Katarzyna Danieluk², Jerzy Mackiewicz² (¹Warsaw - Poland, ²Lublin - Poland)
- 5288 F.112 Diabetes exacerbates the early RGCs loss of function in the DBA/2J inherited mouse model of Glaucoma
Rosario Amato^{1,3}, Francesca Lazzara^{2,3}, Tsung Han Chou³, Vittorio Porciatti³, Massimo Dal Monte¹, Giovanni Casini¹ (¹Pisa - Italy, ²Catania - Italy, ³Miami - USA)
- 5366 F.114 Ocular melanin binding of drugs: in vitro binding studies
Sina Bahrpeyma¹, Anna-Kaisa Rimpelä², Marja Hagström², Arto Urtti^{1*} (¹Kuopio - Finland, ²Helsinki - Finland)
- 5378 F.115 Synthesis and application of magnetic nanoparticles (MNPs) in siRNA delivery to the retina
Marco Bassetto¹, Merve Sen², Blanca Arango Gonzalez², Marius Ueffing², Florent Poulhes¹, Olivier Zelphati¹ (¹Marseille - France, ²Tuebingen - Germany)
- 5390 F.116 Extraction of hyaluronic acid and chondroitin sulfate from marine biomass for their application in the treatment of the dry eye disease
Maha Abdallah (Oeiras - Portugal)
- 5396 F.117 Non-invasive, needle-free drug delivery for treatment of retinal degeneration on Bardet-Biedl syndrome
Daniel Roberto Ajoy Moreno^{1*}, Marco Bassetto^{2*}, Cathy Obringer Obringer¹, Nadia Messaddeq¹, Florent Poulhès², Olivier Zelphati², Hélène Dollfus¹, Vincent Marion¹ (¹Strasbourg - France, ²Marseille - France)

POSTERS

- 5421 F.118 Anthocyanin oligomers counteracts ischemic and oxidative insults to retinal cells and lipid peroxidation to brain membranes
Kuidong Kang, Hyung Bin Hwang (Incheon - South Korea)
- 5434 F.119 The impact of oral escitalopram treatment on the function of retinal interneurons in the rat model of retinal ischemia – a pilot study
Joanna Machowicz, Alicja Wojtyniak, Anna Pacwa, Patryk Wawrzonkowski, Przemyslaw Witek, Emilia Kocot, Jakub Maciurzynski, Joanna Lewin-Kowalik, Adrian Smedowski, Marita Pietrucha-Dutczak (Katowice - Poland)
- 5449 F.120 RESVEGA in exudative age-related macular degeneration – the next well-documented clinical case
Anna Kubicz* (Wroclaw - Poland)
- 5484 F.121 Biological tissue as a active substances drug prolonged diffusion support
Florine Grossetete*, Laurence Barnouin (Mions - France)
- 5413 F.122 7,8-Dihydroxyflavone protects axotomy-induced retinal ganglion cell loss in adult albino rats
Beatriz Vidal-Villegas¹, Johnny Di Pierdomenico², Manuel Salinas-Navarro², Jose Manuel Bernal-Garro², Marta Agudo-Barriuso², María Paz Villegas-Pérez², Jose M. Martínez de la Casa¹, Julián García-Feijoo¹, Manuel Vidal-Sanz² (¹Madrid - Spain, ²Murcia - Spain)
- 5346 F.123 Characterization and tissue localization of ocular carboxylesterases in multiple species
Anam Hammid¹, Kati-Sisko Vellonen¹, Marika Ruponen¹, Arto Urtti^{2*}, Paavo Honkakoski³ (¹Kuopio - Finland, ²Helsinki - Finland, ³Chapel Hill - USA)
- 5408 F.124 Short and long term effects of NMDA-induced retinal excitotoxicity on melanopsin and non-melanopsin containing retinal ganglion cells
Beatriz Vidal-Villegas¹, Johnny Di Pierdomenico², Juan Antonio Miralles de Imperial-Ollero², Jose Manuel Bernal-Garro², María Paz Villegas-Pérez², Manuel Vidal-Sanz² (¹Madrid - Spain, ²Murcia - Spain)



POSTERS

10:15-11:15



Poster Session G

Chairmen: **Dimitrios Besinis** (Nea Smyrni - Greece), **Alastair Porteous** (London - United Kingdom)

- 5284 S.001 P2RY12 expression at different time-points in a mouse model of experimental glaucoma
rf **José A. Fernández-Albarral¹, Ana I. Ramírez¹, Rosa de Hoz¹, Elena Salobar-García¹, Inés López-Cuenca¹, Ester Liscastro², Francisco J. Valiente-Soriano³, Manuel Vidal-Sanz³, José M. Ramírez¹, Juan J. Salazar¹** (¹Madrid - Spain, ²Rende - Italy, ³Murcia - Spain)
- 5457 S.002 Candidate gene analysis of germline variants in Finnish patients with juvenile open-angle glaucoma
rf **Reetta-Stiina Järvinen, Abdessallam Tadjji, Pauliina Repo, Perttu Liuska, Mika Harju, Tero Kivelä, Joni Turunen*** (Helsinki - Finland)
- 5124 S.003 Prevalence of risk variants for glaucoma in the MYOC gene in the general population
rf **Perttu Liuska, Tero Kivelä, Joni Turunen*** (Helsinki - Finland)
- 5077 S.004 Primary open angle glaucoma and vascular risk factors: a review of population based studies from 1990 to 2017
rf **Andrzej Grzybowski¹, Mariusz Och¹, Piotr Kanclerz², Christopher Leffler³** (¹Olsztyn - Poland, ²Gdansk - Poland, ³Richmond - USA)
- 5349 S.005 The ability of eye tracking perimetry to detect glaucoma
rf **Andrew Tatham*, Pam McClean, Ian Murray, Alice McTrusty, Brash Harry, Fleck Brian, Robert Minns** (Edinburgh - United Kingdom)
- 5241 S.006 In vivo anterior optic nerve head changes as a function of visual field loss in glaucoma
rf **Ryan Lee Bartlett¹, Bethany E. Frost^{1,2}, Nick White¹, James R. Fergusson¹, James E. Morgan¹, Rachel V. North¹, Julie Albon¹** (¹Cardiff - United Kingdom, ²Dublin - Ireland)
- 5404 S.007 Effect of sustained-release bimatoprost implant (Bimatoprost SR) on visual field mean deviation in glaucoma patients in a phase 1/2 clinical trial
rf **Ingeborg Stalmans^{1*}, Marina Bejanian², Margot Goodkin², Jane Zhang², Kevin Wang², Michael Robinson², Douglas J. Rhee³** (¹Leuven - Belgium, ²Irvine - USA, ³Cleveland - USA)
- 5196 S.008 Anti-glaucomatous preparations and effect on human conjunctival goblet cells
rf **Anne Hedengran¹, Xenia Begun¹, Olivia Müllertz¹, Zaynab Mouhammad¹, Rupali Vohra¹, Goran Petrovski², Miriam Kolko^{1*}** (¹Copenhagen - Denmark, ²Oslo - Norway)
- 5453 S.009 Effectiveness of selective laser trabeculoplasty in glaucoma patients: A 6 years follow up study
rf **Indira Aristeguieta, Eleonora Ayala, Karla Gonzales-Farro, Alfonso Anton, Laura Beltran Agullo, Antonio Morilla** (Barcelona - Spain)
- 5034 S.010 Comparison of Conjunctival Vascularity Changes Using Optical Coherence tomography angiography after trabeculectomy and phacotrabeculectomy
Je Hyun Seo (Seoul - South Korea)
- 5054 S.011 Outcomes and risk factor for failure after aqueous shunt implants – Annual review of one service results and benchmark
Renata Puertas¹, Fernanda Susanna², Ameet Shah¹, Fabiola Murta¹, Vaneeta Sood¹, Ashkan Khalili¹, Keith Barton¹ (¹London - United Kingdom, ²São Paulo - Brazil)
- 5055 S.012 Benchmarking posterior capsule rupture rate in glaucoma patients before and after patient-surgeon risk match
Fernanda Susanna¹, Renata Puertas² (¹São Paulo - Brazil, ²London - United Kingdom)

POSTERS

- 5056 S.013 Prevalence of endophthalmitis after aqueous shunt implants and related procedures in an eye service
Renata Puertas¹, Fernanda Susanna², Suzanne Turner¹, Nadine Grant-McKenzie¹, Catherine Wagland¹, Maria Papadopoulou¹ (¹London - United Kingdom, ²São Paulo - Brazil)
- 5061 S.014 Development of a nomogram using fundus photography to predict glaucoma progression in patients showing disc hemorrhage
Sangah Kim¹, Hyoung Won Bae² (¹Goyang - South Korea, ²Seoul - South Korea)
- 5087 S.015 Effects of Vitamin D deficiency on intraocular pressure values obtained by ocular response analyzer
Tolga Kocaturk¹, Sinan Bekmez², Mustafa Unubol¹ (¹Aydin - Turkey, ²Izmir - Turkey)
- 5110 S.016 Association of preservative-free versus glaucoma eye drops with preservatives and further glaucoma surgery. A retrospective study based on the French national health insurance information system, 2008-2016
Chloé Chamard¹, Sophie Larrieu², Christophe Baudouin², Alain Bron³, Max Villain¹, Vincent Daïen¹ (¹Montpellier - France, ²Paris - France, ³Dijon - France)
- 5119 S.017 Randomized clinical study of the citicoline effect in glaucoma and glaucoma phacoemulsified patients
Georgia Theofilou (Thessaloniki - Greece)
- 5123 S.018 A preclinical study of the intraocular pressure lowering efficacy of bimatoprost sustained release in eyes pretreated with selective laser trabeculoplasty
Corine Ghosn*, Michael Engles*, Lakshmi Rajagopalan*, Sveti Ugarte*, Shruti Mistry, Werhner Orilla, Margot Goodkin, Michael Robinson, Marcos Rivas, Mohammed Dibas (Irvine - USA)
- 5125 S.019 The effect of systemic blood pressure on optical coherence tomography angiography in glaucoma patients with optic disc hemorrhage
Hyoung Won Bae¹, Chan Keum Park², Sang Yeop Lee¹, Gong Je Seong¹, Chan Yun Kim¹ (¹Seoul - South Korea, ²Busan - South Korea)
- 5130 S.020 POAG patients have higher caffeinated coffee consumption than controls
Ioanna Mylona, Ioannis Tsinopoulos (Thessaloniki - Greece)
- 5131 S.021 Migraine headache and high tension glaucoma among adult population living in Armenia: a case-control study
Aida Giloyan, Tsovinar Harutyunyan, Varsik Hakobyan, Lilit Kirakosyan, Varduhi Petrosyan (Yerevan - Armenia)
- 5133 S.022 Establishment of personalized finite element model using the real-time measurement of human eye with optical coherent tomography
Yong Chan Kim¹, Hyung Bin Hwang¹, Kui Dong Kang¹, Sung Chan Chung², Hwi Yeon Kim² (¹Incheon - South Korea, ²Kyonggi-do - South Korea)
- 5137 S.023 Comparison of vessel density and retinal nerve fiber layer thickness in patients between both eyes of subjects with clinically unilateral pseudoexfoliation syndrome using optical coherence tomography angiography
Heon Yang¹, Jin Young Ryu², Tae Heon Lee² (¹Seoul - South Korea ²Busan - South Korea)
- 5145 S.024 Distribution of nanoparticles in the anterior chamber of porcine eyes
Tobias Sonntag, Franziska Froemel, Michaela Guter, Andrea Dillinger, Rudolph Fuchshofer, Miriam Breunig* (Regensburg - Germany)
- 5146 S.025 PLGA microspheres loaded with a ROCK inhibitor as an intravitreally injectable drug delivery system for the management of glaucoma
Raphael Mietzner, Christian Kade, Franziska Froemel, Rudolf Fuchshofer, Joachim Wegener, Miriam Breunig* (Regensburg - Germany)

POSTERS

- 5154 S.026 5-year progression of primary angle closure after treatment: the Primary Angle Closure Study (PACeS)
Jayant Venkatramani Iyer*, Sieh Yean Kiew, Monisha Nongpiur, Tin Aung (Singapore - Singapore)
- 5157 S.027 Multimodal exploration of the reasons behind poor eye drop compliance and its consequences
Gloria Cisa Asinari di Gresy e Casasca (London - United Kingdom)
- 5163 S.028 Ahmed glaucoma valve versus Ex-PRESS glaucoma shunt in the surgical treatment of glaucoma : 2-year follow up
Jiyoung Lee, Jin A. Choi (Seoul - South Korea)
- 5167 S.029 Apparent fiber density of glaucomatous optic nerves
Shereif Haykal, Nomdo Jansonius, Frans Cornelissen (Groningen - The Netherlands)
- 5200 S.030 Intraocular pressure is influenced by ambient temperature in glaucoma patients
Johann Ferdinand Krebs, Sami Hosari, Robert Lämmer, Christian Mardin, Bettina Hohberger (Erlangen - Germany)
- 5203 S.031 The relationship between ambient air pollution and glaucoma phenotypes in a large community cohort
Sharon Chua¹, Anthony Khawaja¹, Charles Reisman², Peng Khaw¹, Praveen Patel¹, Paul Foster¹ (¹London - United Kingdom, ²New Jersey - USA)
- 5204 S.032 The role and mechanism of retinal ganglion cell death in glaucomatous injury
Zara Ali¹, Terrance Mensah¹, Matthew Felgate², Robert Watt¹, Tasneem Z. Khatib¹, James R. Tribble³, James E. Morgan³, Keith R. Martin⁴, Andrew Osborne¹ (¹Cambridge - United Kingdom, ²Norwich - United Kingdom, ³Cardiff - United Kingdom, ⁴Melbourne - Australia)
- 5211 S.033 Longitudinal morphological assessment of macular changes in glaucoma
Stefano Mercuri, Benjamin Davis, Timothy Yap, Maria Francesca Cordeiro*, Eduardo Maria Normando (London - United Kingdom)
- 5213 S.034 Unexpected visual acuity loss as the first sign of a xen implant complication
Sara Marco Monzón, Isabel Lopez Sangros, Gisela Karlsruher Riegel, Paula Montes Rodriguez, Maria Dolores Diaz Barreda, Ana Boned Murillo, Juana Martinez Morales, Javier Ascaso Puyuelo (Zaragoza - Spain)
- 5226 S.035 Clinical validation trial of glaucoma easy screener (GES) as a low-cost and portable visual field screening tool
Esmael Kedir Nida, Evelien Vandewalle, Karel Van Keer, Vero Vanden Abeele, Luc Geurts (Leuven - Belgium)
- 5240 S.036 Progression patterns of normal-tension glaucoma groups classified by hierarchical cluster analysis
Hyo Song Park, Eun Woo Kim, Cham Keum Park, Wungrak Choi, Kwang Hyun Lee, Gong Je Seong, Chan Yun Kim, Sang Yeop Lee, Hyoung Won Bae (Seoul - South Korea)
- 5246 S.037 Positive correlation of blood reflux in Schlemm's canal and reduction of intraocular pressure after ab interno 360-degree viscocanalostomy in primary open-angle glaucoma
Matthias Grieshaber¹, Ané Pienaar², Robert Stegmann^{2*} (¹Basel - Switzerland, ²Pretoria - South Africa)
- 5258 S.038 Integrated pilot medical study on 40 patients affected by open angle glaucoma undergoing topical therapy with additional osteopathic manipulation
Daniela Paoli¹, Paolo Brusini², Leonardo Michelin³, Fabrizio Vassallo³, Luigi Ciullo³, Lucio Torelli⁴ (¹Monfalcone - Italy, ²Udine - Italy, ³Genova - Italy, ⁴Trieste - Italy)

POSTERS

- 5262 S.039 Assessment of intraocular pressure with an artificial model eye mimicking human eye
Seung Hyen Lee¹, Han Saem Cho², Sae Chae Jeoung² (¹Seongnam - South Korea, ²Daejeon - South Korea)
- 5276 S.040 Uveitis-glaucoma- hyphema syndrome (UGH) as complication in the long-term cataract surgery
Maria Dolores Diaz, Ana Boned, Juana Martínez, Sara Marco, Isabel López, Gisela Karlsruher, Paula Montes, Francisco Javier Ascaso* (Zaragoza - Spain)
- 5277 S.041 Release of cytokines/myokines by retinal tissue at different times in a mouse model of glaucoma
José A. Fernández-Albarral¹, Ana I. Ramírez¹, Rosa de Hoz¹, Meritxell López-Gallardo¹, M. Moya¹, E. Marco¹, Elena Salobar-García¹, Marcelino Avilés-Triguero², Maria P. Villegas-Pérez², Juan J. Salazar¹, José M. Ramírez¹, José M. Ramírez¹ (¹Madrid - Spain, ²Murcia - Spain)
- 5278 S.042 Impact of preserved and preservative-free 0.005 % latanoprost ophthalmic formulations on human conjunctival goblet cell survival
Miriam Kolko^{1*}, Zaynab Ahmad Mouhammad¹, Olivia Müllertz¹, Rupali Vohra¹, Steffen Heegaard², Goran Petrovski³ (¹Copenhagen - Denmark, ²Glostrup - Denmark, ³Oslo - Norway)
- 5310 S.043 The correlations between posterior scleral profile and autonomic dysfunction in normal tension glaucoma
Da Young Shin, Chan Kee Park (Seoul - South Korea)
- 5311 S.044 Results of irido-zonulo-hyaloidotomy plus complete pars plana vitrectomy for pseudophakic malignant glaucoma
Tsengenbayar Munkhzaya (Ulaanbaatar - Mongolia)
- 5320 S.045 Effect of Vitamin D3 on shear stress-driven cell proliferation in human Tenon's Fibroblasts
Shuo Jia* (Hong Kong - Hong Kong)
- 5335 S.046 OCT-angiography: mydriatic phenylephrine and tropicamide do not influence retinal microvasculature in the macula and peripapillary region
Bettina Hohberger*, Meike Müller, Sami Hosari, Christian Mardin (Erlangen - Germany)
- 5342 S.047 Retinal vessel diameters and systemic antioxidant capacity during hypoxia in patients with normal-tension glaucoma and individuals with ocular hypertension
Mia Langbøl¹, Thisayini Baskaran¹, Daniel Tiedemann¹, Sarkis Saruhanian¹, Anne Katrine Toft-Kehler¹, Peter Koch Jensen¹, Peter Skov Jensen², Niels Vidiendal Olsen¹, Rupali Vohra¹, Miriam Kolko^{1*} (¹Copenhagen - Denmark, ²Aarhus - Denmark)
- 5352 S.048 Ophthalmic conditions and dementia: a nation-wide study
Anna Horwitz^{1*}, Marc Klemp², Christian Torp-Pedersen³, Miriam Kolko^{2*} (¹Glostrup - Denmark, ²Copenhagen - Denmark, ³Aalborg - Denmark)
- 5362 S.049 A case of bilateral acute angle closure glaucoma secondary to systemic decongestants
Eunice Jin Hui Goh, Kumari Neelam, Tiakumzuk Sangtam, Philip Stanley (Singapore - Singapore)
- 5414 S.050 OCT-RNF and GCC in hereditary glaucoma
Oksana Vitovska, Olena Kurilina, Tatyana Baran, Tatyana Komarova (Kyiv - Ukraine)
- 5443 S.051 XEN in extreme cases
Shirin Djavanmardi, Elena Milla (Barcelona - Spain)
- 5448 S.052 Ocular surface, dry eye, glaucoma & preservatives
Nyaish Mansoor, Rohit Sharma (Burton Upon Trent - United Kingdom)

POSTERS

- 5461 S.053 Validation of a predictive model for retinal vascular resistance and blood flow by means of Laser Speckle Flowgraphy
Konstantinos Pappelis¹, Lars Choritz², Nomdo Jansonius¹ (¹Groningen - The Netherlands, ²Magdeburg - Germany)
- 5462 S.054 OSA, CPAP and Glaucoma
Michael Howells, Rohit Sharma (Burton on Trent - United Kingdom)
- 5464 S.055 Recurrent cystic bleb leak management using limbal allograft
Galina Vashkevich*, Tatsiana Imshenetskaya (Minsk - Belarus)
- 5465 S.056 Trabeculectomy: an assessment of the quality and readability of online patient information
Aaron Donnelly (Cork - Ireland)
- 5468 S.057 Short and long term results of the first XEN45 implanted in our service
Juan Antonio Miralles de Imperial-Ollero, Almudena Caravaca-Alegría, José María Caracena-Ordóñez, José Javier García-Medina, María Paz Villegas-Pérez (Murcia - Spain)
- 5480 S.058 Pupil irregularity after ultrasound ciliary plasty in glaucoma treatment
Bartłomiej Bolek, Adam Wylegala, Robert Mazur, Edward Wylegala (Katowice - Poland)
- 5488 S.059 Afro-Caribbean patients have a lower disc vascular density than European patients: a cross-sectional study
María Liseth Salazar Quiñones¹, K. Sheng Lim², Cynthia Yu-Wai-Man², Alba De Antonio Ramirez², Julián García Feijoo¹, Carmen Dora Méndez Hernández¹, Pilar Peña Urbina¹ (¹Madrid - Spain, ²London - United Kingdom)
- 5490 S.060 Transduction pattern of adeno-associated viruses in the trabecular meshwork and anterior-segment structures in a rat model of ocular hypertension
Si Hyung Lee, Sang Earn Woo, Tae Kwann Park (Bucheon - South Korea)
- 5445 S.061 Curry to treat Alzheimer's disease?
Ehtesham Shamsheer, Li Guo, Benjamin M. Davis, Vy Luong, Nivedita Ravindran, Satyanarayana Somavarapu, M. Francesca Cordeiro* (London - United Kingdom)
- 5304 S.062 Pseudoexfoliation glaucoma - Do genes or environment matter more?
Alison Greene, Sarah Eivers, Edward Dervan, Colm O'Brien, Deborah Wallace (Dublin - Ireland)

10:15-11:15



Poster Session NSPH

Chairmen: **Dominique Bremond-Gignac** (Paris - France), **Aki Kawasaki** (Lausanne - Switzerland)

- 5485 S.063 The epidemiology of myopia in school children worldwide
Andrzej Grzybowski¹, Piotr Kanclerz², Kazuo Tsubota³, Carla Lanca⁴, Seang-Mei Saw⁴ (¹Olsztyn - Poland, ²Gdansk - Poland, ³Tokyo - Japan, ⁴Singapore - Singapore)
- 5151 S.064 Influence of strabismus on the motor skills in children
Coralie Hemptinne, Thomas Pellissier, Clément Ramirez Ruiz, Catherine Vanderveken, Demet Yuksel (Brussels - Belgium)
- 5293 S.065 The hypocritical optic disc in long term visual loss
Hermann Krastel, Achim Gass, Marwa Erwemi, Christian Kahlert, Jost B. Jonas* (Mannheim - Germany)

POSTERS

- 5267 S.066 An unusual case of intradural haemangioma of the optic nerve mimicking optic neuritis
rf **Abigail Hopkins¹, Sachin Salvi, Archana Airody², Richard Gale²** (¹Macclesfield - United Kingdom, ²York - United Kingdom)
- 5198 S.067 Visual changes in patients with early type 2 diabetes mellitus without diabetic retinopathy due to possible subclinical ischemia
rf **María José Vicente, Elisa Vilades, Elvira Orduna, Beatriz Cordón, Javier Pérez-Velilla, Isabel Melchor, Laura Gil-Arribas, María Jesús Rodrigo, María Satué, Elena García-Martín** (Zaragoza - Spain)
- 5045 S.068 Effects of combined neuroprotective and regenerative agents on damaged retinal ganglion cells in vivo
Toshiyuki Oshitari, Yuta Kitamura, Bikbova Guzel, Takayuki Baba, Shuichi Yamamoto (Chiba - Japan)
- 5064 S.070 Results of treatment of accommodation disorders in patients taking into account the balance of vegetative innervation using pupillography
Nataliia Bushuieva, Shakir Dukhayer, Svitlana Slobodianik (Odesa - Ukraine)
- 5086 S.071 Correlation between disease duration and retinal sensitivity and structure in patients with neuromyelitis optica spectrum disorder with no history of optic neuritis
Hirotaoka Yokouchi (Chiba - Japan)
- 5112 S.072 Self-perforation of eye in patients with mental disorders
Jonida Klosi, Olga Andrushkova, Kateryna Hrizhymalsk, Lina Kaminska, Natalya Natalya Didik (Vinnytsya - Ukraine)
- 5168 S.073 Opposing neurological responses to autologous peripheral blood stem cell transplantation in two patients with POEMS syndrome
Jin Ota, Hirotaoka Yokouchi, Takayuki Baba, Shuichi Yamamoto (Chiba - Japan)
- 5169 S.074 Physiological changes in retinal layers thicknesses measured with swept source optical coherence tomography
Javier Pérez Velilla, María José Vicente, Elisa Viladés Palomar, Elvira Orduna Hospital, Amaya Pérez Del Palomar, Jose Cegoñino Banzo, Alberto Montolio Marco, María Satué Palacián, Elena García Martín, Beatriz Cordón Ciordia (Zaragoza - Spain)
- 5170 S.075 Affection of neuroretina and ocular motility in patients affected by thalidomide embryopathy
Javier Pérez-Velilla, María José Vicente, Elisa Vilades Palomar, Elvira Orduna Hospital, Beatriz Cordón Ciordia, Jose Velilla, María Jesús Rodrigo, María Satué, Elena García-Martín (Zaragoza - Spain)
- 5172 S.076 Evaluation with angiography by optical coherence tomography of patients with multiple sclerosis
Beatriz Cordón Ciordia, Javier Pérez Velilla, María José Vicente Altabas, Elisa Viladés Palomar, Elvira Orduna Hospital, Amaya Pérez - Del Palomar, Jose Cegoñino Banzo, Alberto Montolio Marco, Jose Ramón Ara Callizo, María Jesus Rodrigo Sanjuán, María Satué Palacián, Elena García Martín (Zaragoza - Spain)
- 5173 S.077 Impact of OCT and visual function in multiple sclerosis patients treated with Fingolimod
Javier Pérez-Velilla, María José Vicente, Elisa Vilades Palomar, Elvira Orduna Hospital, Beatriz Cordón Ciordia, Laura Gil-Arribas, Erika Ruiz De Gopegui, María Jesús Rodrigo, María Satué Palacian, Elena García-Martín (Zaragoza - Spain)
- 5197 S.078 Neuro-retinal alteration in dizygotic twins with multiple sclerosis
María José Vicente, Elisa Vilades, Elvira Orduna, Beatriz Cordón, Javier Pérez-Velilla, Javier Fernández-Tirado, María Jesús Rodrigo, María Satué, Elena García-Martín (Zaragoza - Spain)

POSTERS

- 5221 S.079 Retinal vessel oximetry in children with inherited retinal diseases
Maria della Volpe Waizel¹, Hendrik P. N. Scholl¹, Christophe Valmaggia², Margarita G. Todorova² (¹Basel - Switzerland, ²St. Gallen - Switzerland)
- 5244 S.080 Complete blood cell count indexes in non-arteritic anterior ischemic optic neuropathy
Antonio Pinna, Tiziana Porcu, Jacopo Marzano, Francesco Boscia, Panagiotis Paliogiannis, Ciriaco Carru, Angelo Zinellu (Sassari - Italy)
- 5279 S.081 Progressive impairment of visual function in fibromyalgia
Elvira Ordunahospital, Elisa Viladés Palomar, Beatriz Cordón Ciordía, Javier Pérez Velilla, María José Vicente Altabás, María Satué Palacián, Javier García Campayo, María Jesús Rodrigo Sanjuán, Elena García Martín (Zaragoza - Spain)
- 5287 S.082 Etiologies and treatment of manifest vertical deviations: series of 95 patients
William Boucenna¹, Nabil Taright², Nesrine Rahmania¹, Hussein Morfeq¹, Benjamin Jany¹, Veronique Promelle¹, Dominique Bremond Gignac³, Solange Milazzo¹ (¹Amiens - France, ²Somain - France, ³Paris - France)
- 5333 S.083 Relationship between retinal thinning, disease duration and disability status in multiple sclerosis patients
Elisa Viladés, Elvira Orduna, Beatriz Cordón, Javier Perez-Velilla, Maria José Vicente, Laura Gil-Arribas, Javier Fernandez-Tirado, Erika Haro, Erika Ruiz de Gopegui, Maria Jesús Rodrigo-Sanjuán, Maria Satué, Elena Garcia-Martin (Zaragoza - Spain)
- 5397 S.084 A symmetric coordination of saccades mostly relies on the vergence neuroplasticity. Theoretical and clinical evidences using distinctive and interactive combinations with REMOBI
Aurélien Morize, Zoï Kapoula, Botao Peng, Themis Palpanas, François Daniel, Dominique Brémond-Gignac (Paris - France)
- 5403 S.085 Visual acuity and structure-function relationships in acute and chronic LHON patients treated with idebenone
Berthold Pemp*, Karl Kircher, Andreas Reitner (Vienna - Austria)
- 5406 S.086 Papillorenal syndrome with secondary serous retinal detachment: family history can help the diagnosis
Francoise Roulez (Basel - Switzerland)
- 5426 S.087 Non-arteritic anterior ischemic optic neuropathy due to hypovolemia
Georgios Bontzos, Evangelos Gkoumas, Tina Xirou, Efterpi Chatzispasou, Stamatina Kabanarou (Athens - Greece)
- 5469 S.088 Solo surgeon strabismus surgery technique
Phey Feng Lo*, Alastair Lockwood, Anthony Evans, Richard Thornton, Dominic Townsend (Portsmouth - United Kingdom)
- 5475 S.089 Differences in the retina of patients with confirmed diagnosis of multiple sclerosis versus isolated clinical syndrome
Elisa Viladés Palomar, Elvira Orduna, Cordón Beatriz, Javier Perez-Velilla, Maria José Vicente, Maria Jesús Rodrigo-Sanjuán, Maria Satué, Elena Garcia-Martin (Zaragoza - Spain)
- 5478 S.090 Intravitreal anti-vascular endothelial growth factor therapy for acute rop: our management of ten eyes
Donatella Barilà, Rosanna Guagliano, Chiara Bertone, Silvia Montescani, Cristina Arpa, Luciano Quaranta (Pavia - Italy)

POSTERS

- 5315 S.091 Individuals prevalence affected by myopia in the riverside population of Santarém, Pará, compared to the urban population of Campinas, São Paulo
 rf TS
 Lais Raphaelli Caramel, Alexandre Scremin Czezacki, Bruna Albertini Reis, Giovanna Oncala Simão, Gustavo de Campos Olavarria, Henrique Ferreira Greco, Isabella Carinhani Braghetto, Isabella Soares Ricioli, José Anibale Rodrigues Junior, Luísa da Cunha Gobbo, Marianne Benedicto de Souza, Otto Albuquerque Beckedorff, Vanessa Giffoni Braga Mont'Alvão, Thiago José Delfraro Carmo, Luíza Abreu Minussi, Elvira Barbosa Abreu (Campinas - Brazil)

10:15-11:15


Poster Session EOVs

Chairmen: **Marisa Rodriguez Carmona** (London - United Kingdom), **Pedro De La Villa** (Alcala De Henares - Spain)

- 5402 S.092 Electrophysiological methods- exact diagnostics in ophthalmology
 rf
 Tamara Stetinova (Bratislava - Slovakia)
- 5290 S.093 Clinical experiences in flash adaptometry
 rf
 Hermann Krastel^{1*}, Marlene Zyganow², Feras Kaltakji¹, Michael May³, Frank Schlichtenbrede¹ (¹Mannheim - Germany, ²Heidelberg - Germany, ³Brandenburg - Germany)
- 5295 S.094 The effect of stimulus contrast on the harmonic components of steady state visual evoked potentials
 rf
 Benjamin Solf (Ilmenau - Germany)
- 5456 S.095 Electrical synapses interconnecting axons in the optic nerve head – a novel model of optic nerve function
 rf
 Marita Pietrucha-Dutczak¹, Saeed Akhtar², Xiaonan Liu³, Lucia Podracka⁴, Elisa Toropainen⁴, Aljoharah Alkanaana², Marika Ruponen⁴, Arto Urtti^{4*}, Markku Varjosalo³, Kai Kaarniranta⁴, Joanna Lewin-Kowalik¹, Adrian Smedowski¹ (¹Katowice - Poland, ²Riyadh - Saudi Arabia, ³Helsinki - Finland, ⁴Kuopio - Finland)
- 5370 S.096 Detecting hydroxychloroquine retinal toxicity using a novel multifocal electroretinography stimulus
 rf
 Stuart Coupland*, Adrian Tsang, Chloe Gottlieb, Miso Gostimir, Michael Dollin, Harrish Nithianandan (Ottawa - Canada)
- 5300 S.097 The link between central retinal thickness and retinal nerve fibre layer thickness in patients with retinitis pigmentosa
 Anna Friesacher*, Christophe Valmaggia, Margarita Todorova (St. Gallen - Switzerland)
- 5371 S.098 Activating an optogenetically engineered retina with a wearable headset in patients with retinitis pigmentosa
 rf
 Joël Chavas*, Nacer Boussahoul, Damien Duport, Charlie Galle, Francesco Galluppi, Laure Blouin, Pierre Burguière, Thomas Hardin, Proshato Shabestary, David Gray (Paris - France)
- 5451 S.099 Development of a new animal model of radiation retinopathy using an experimental radiation platform
 rf
 Jeremie Villaret¹, Frederic Pouzoulet², Carole Thomas², Patricia Crisanti¹, Kimberley Delaunay¹, Nathalie Cassoux¹, Alexandre Matet¹, Francine Behar-Cohen^{1*} (¹Paris - France, ²Orsay - France)
- 5454 S.100 The grading of risk factors for diabetes based on early loss of colour and flicker sensitivity
 Qais Bastaki, Marisa Rodriguez-Carmona, John L. Barbur* (London - United Kingdom)
- 5116 S.101 Application of revolution CT xtream in eye capacity analysis of patients with high myopia
 Xiaodan Jiang (Shenzhen - China)

POSTERS

- 5331 S.102 Validation of a measurement setup for simultaneous ERG recording and ocular current stimulation
Maren-Christina Blum, Sascha Klee (Ilmenau - Germany)
- 5368 S.103 Across-frequency interference in visual temporal gap detection revisited
Nobuyuki Hirose, Shuji Mori (Fukuoka - Japan)
- 5388 S.104 Reduced pattern electroretinogram signal in affected patients with leber hereditary optic neuropathy
Melanie Lalonde¹, Ange-Lynca Kantungane¹, Alfredo Sadun², Stuart Coupland^{*1}, Rustum Karanjia¹ (¹Ottawa - Canada, ²Los Angeles - USA)
- 5441 S.105 Comparison of peak times of photopic flicker electroretinogram responses recorded using conventional and portable systems in Birdshot chorioretinopathy
Aleksandra Pekacka, Angharad Hobby, Isabelle Chow, Mathura Indusegaran, Christopher Hammond, Miles Stanford, Omar Mahroo (London - United Kingdom)
- 5228 S.106 Regulation of the glutamate release by pH and GABA at the axon terminal of ROD photoreceptors
Alejandro Gallego-Ortega¹, Fei Liao², Manuel Vidal-Sanz¹, Pedro De la Villa² (¹Murcia - Spain, ²Alcalá de Henares - Spain)



13:00-14:00 | RHODES 2

CIS

Théa Luchtime Sponsored Symposium
Improved Dry eye patients outcomes
Chairman: **Kostas Boboridis** (Greece)

Dry eye: treat it as a disease
Kostas Boboridis (Greece)

Tips for management of chronic blepharitis
Sarah Farrant (United Kingdom)

Improving Ocular surface comfort in contact lens wearers
María Peral (Spain)

Use of steroids to cut inflammation in dry eye
Gerhard Garhöfer (Austria)

18:30-19:30 | RHODES 2

SIS

Théa Industry Sponsored Symposium
25 Years of progress in ophthalmology
Chairman: **Rafael I. Barraquer** (Spain)

Evolution of ocular surface therapeutics
Harminder S. Dua (United Kingdom)

How avoiding preservatives is improving glaucoma
Miriam Kolko (Denmark)

25 years of evolutions in glaucoma surgery
Christophe Baudouin (France)

The function of the crystalline lens and the challenge of restoring accommodation
Rafael I. Barraquer (Spain)

12:30-13:30 | RHODES 3

CIS

Aerie Lunchtime Sponsored Symposium
Approaching new paradigms in glaucoma management

Welcome

Maria Francesca Cordeiro (United Kingdom)**Anton Hommer** (Austria)

What more can we do for our open angle glaucoma and ocular hypertension patients?

Maria Francesca Cordeiro (United Kingdom)

"Mesh protection": Understanding physiology to manage pathology

Christophe Baudouin (France)

ROCK inhibition - A new strategy on the horizon of medical management

Francesco Oddone (Italy)

Individualised patient approach

Anton Hommer (Austria)

Questions from the audience and panel discussion

Maria Francesca Cordeiro (United Kingdom)**Anton Hommer** (Austria)

Meeting close

Maria Francesca Cordeiro (United Kingdom)Friday
18 October 2019

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www.worldglaucomaweek.org

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ARVO 2020

MAY 3 – 7 | BALTIMORE, MD.

Important Annual Meeting Dates:

- Abstract submission: Oct. 21 – Dec. 6, 2019
- ARVO hotel reservations: Now open
- Early registration: Oct. 21, 2019 – March 6, 2020

The ARVO Annual Meeting is the world's leading educational and networking forum for clinicians, researchers, students and trainees in the fields of eye and vision research and science.

ARVO.org/AM

New in 2020

Bench-to-Bedside Meeting

**Fri., May 1, 2020
Baltimore, Md.**

Held in conjunction with the ARVO Annual Meeting

- Unique one-day meeting geared towards research innovators and venture capitalists
- Learn how to advance translational ideas to clinically applied products
- Early-stage pipeline companies will share their trials and tribulations of taking a new discovery to the market

Separate registration required.

ARVO.org/B2B

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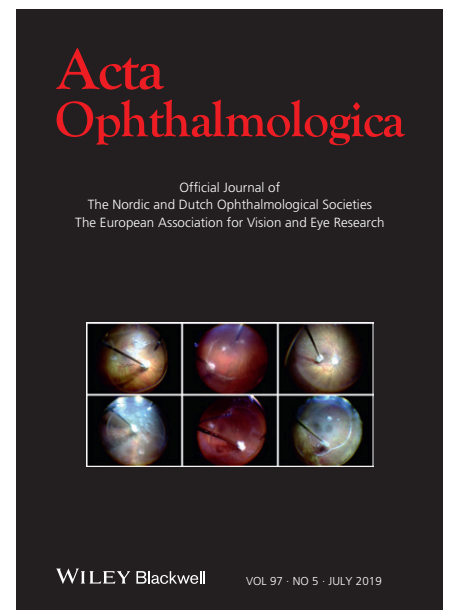
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Edited By:
Einar Stefánsson

Impact Factor
3.153



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