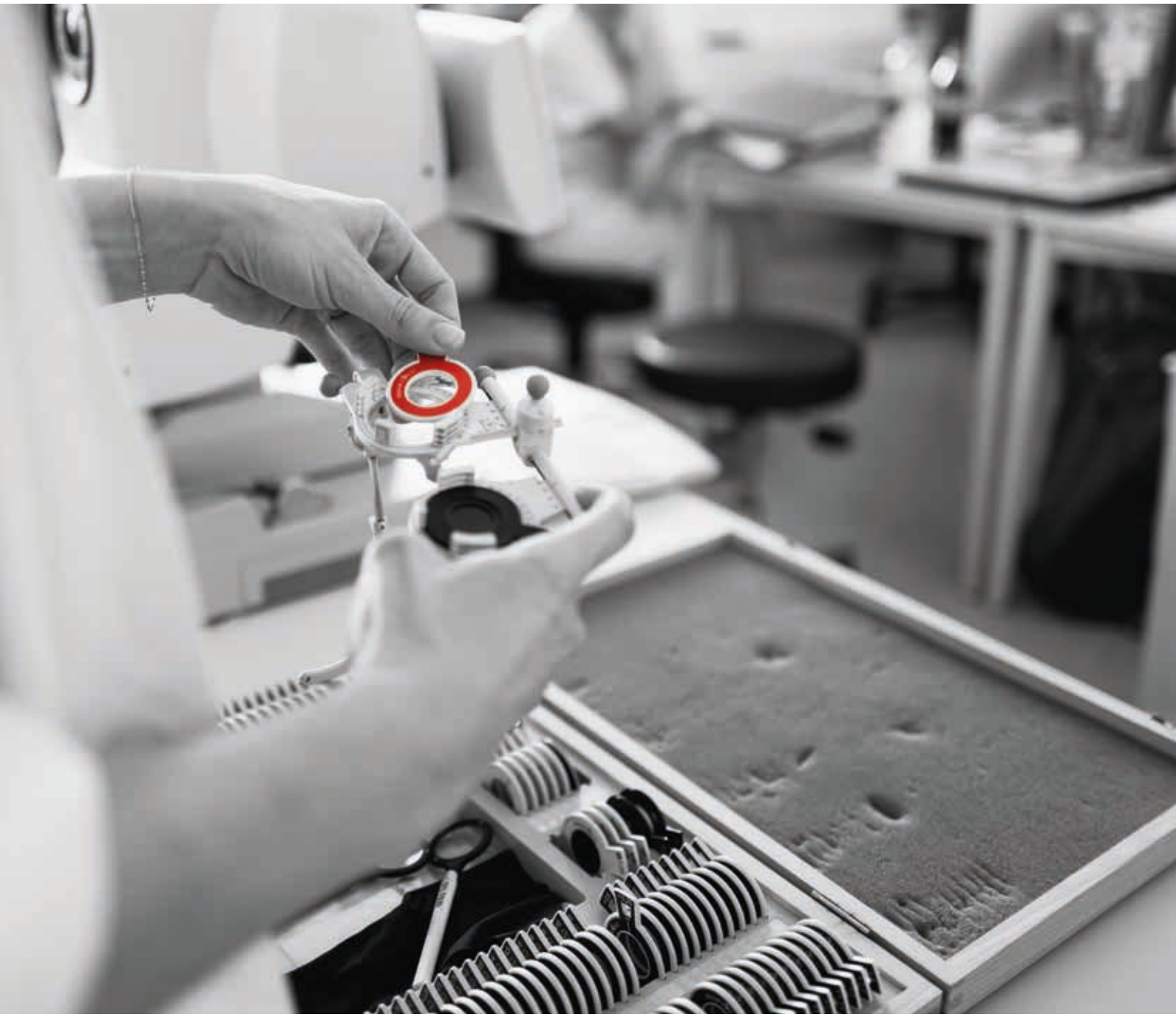
KARL LANDSTEINER GESELLSCHAFT

VIENNA INSTITUTE FOR RESEARCH IN OCULAR SURGERY
A KARL LANDSTEINER INSTITUTE

VIROS

VIROS
2010-2019



Mein Hanusch-Krankenhaus

www.gesundheitskasse.at

VIROS
2010–2019

Mein
Hanusch-Krankenhaus

www.gesundheitskasse.at

While this report is an opportunity to pause and reflect on how far we have come, it is also a moment to celebrate what has been achieved. It is very rewarding to see the results of the hard work as well as the passion and commitment of so many involved.

Since our inception 10 years ago, the achievements of this Institute have added some milestones to the field of Ophthalmology. This will hopefully result in the delivery of enhanced healthcare and add to the wellbeing of patients undergoing ophthalmic surgery. At VIROS, our patients are at the heart of everything we do.

Our innovation, scientific integrity and reputation continues to be reaffirmed by our achievements. VIROS is among the top Ophthalmology research facilities in Austria and is world renowned for its expertise and in-depth studies in cataract surgery. This good standing should not be taken for granted, as the institute is not embedded in a university setting and it is obliged to put in considerable extra effort into attaining the necessary financial support in order to endure. It is also worth mentioning, that none of the doctors at the Hanusch Hospital, who act as clinical investigators, have ever been paid for their work. All of the income goes directly to the institute and is only used to fund VIROS staff and equipment.

Finally, I would like to thank everyone for their help to support the institute including our partners for enabling us to engage in trials with prototype diagnostic equipment and novel medicinal products.

Today, with the backing of the Hanusch Hospital and the Österreichische Gesundheitskasse, as well as partners from the industry and our passionate researchers and staff, we continue on a journey to further develop our expertise in the field of Ophthalmology.

VIROS continues on its path to tackle some of the challenges that ophthalmic surgery still faces.

Enjoy our report!

Univ. Prof. Dr. Oliver Findl
Founder and Director of VIROS

The Karl Landsteiner Society aspires to support medical science in an open and co-operative manner. The society is made up of around 70 institutes focused on patient care, that cover a wide variety of medical disciplines, located mainly in Eastern Austria.

With an impressive number of ongoing clinical studies, of more than 1,200 patients and over 100 publications in peer-reviewed journals, the Vienna Institute for Research in Ocular Surgery – VIROS – headed by Prof. Findl is particularly successful. With respect to number of affected patients and ongoing medical progress, cataract and retinal diseases are important areas of research.

Congratulations to Prof. Findl and his team for their excellency in science. We at the Karl Landsteiner Society are proud of their work for patients and we wish Prof. Findl and VIROS all the best for the future.

Univ.-Prof. Dr. Bernhard Schwarz
President of the Karl Landsteiner Society

VIENNA INSTITUTE FOR RESEARCH IN OCULAR SURGERY
A KARL LANDSTEINER INSTITUTE
VIROS

VIROS

The Vienna Institute for Research in Ocular Surgery (VIROS) is a highly motivated group of researchers that work in the fields of cataract surgery and its related topics, as well as myopia, medical and surgical retina, glaucoma, strabismus and corneal surgery.

The institute was founded in 2010 by Oliver Findl as a Karl Landsteiner institute and has become the largest of all the 70 institutes in Austria. It is integrated into the Department of Ophthalmology at Hanusch Hospital in Vienna.

Clinical studies are the main focus of research as well as some basic science and translational research projects. Most studies are investigator-initiated trials, some supported by medicinal product and pharmaceutical companies, others through public funding sources.

www.viros.at

KARL LANDSTEINER GESELLSCHAFT

THE KARL LANDSTEINER SOCIETY

The Karl Landsteiner society, named after the Austrian Nobel Prize winner who discovered ABO blood groups, is committed to supporting medical research at the highest level. It is an independent medical-scientific research institution, organised as a charitable association with independent institutes.

The Karl Landsteiner Society currently comprises 70 institutes covering almost all fields of medicine. Under the directorship of renowned experts, institutes focus activities on patient care and conduct research alongside usual hospital work, ensuring direct practical relevance. Pragmatic objectives and ongoing assessments ensure constantly high quality standards in all research projects.

OBJECTIVES

- Research
  Creative, independent, quality-assured
- Progress
  Patient-focused, networked, practice-related
- Support
  Innovative, transparent, successful

www.karl-landsteiner.at

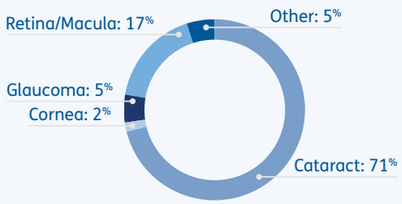
Trials 12/2019

121 Total

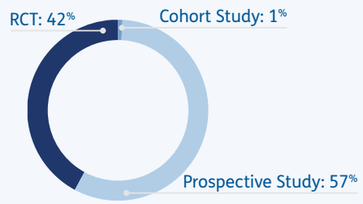
42 Ongoing

1220 Number of patients in ongoing trials (approx.)

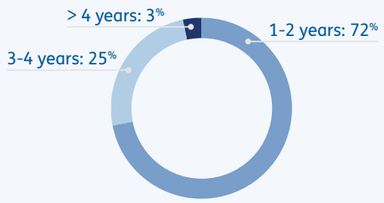
TOPIC



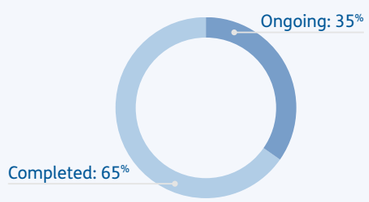
DESIGN



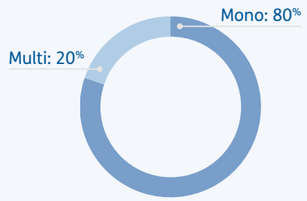
DURATION



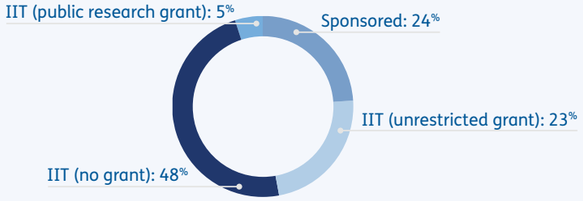
STATUS



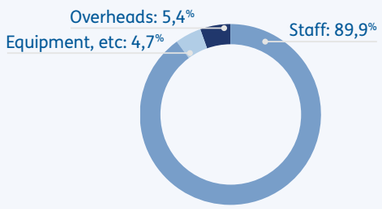
CENTER



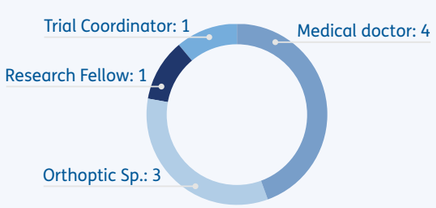
FUNDING



EXPENDITURE 2019



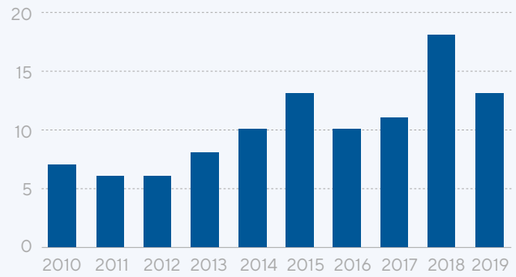
STAFF



102 Peer-reviewed publications SCI listed, 2010-2019

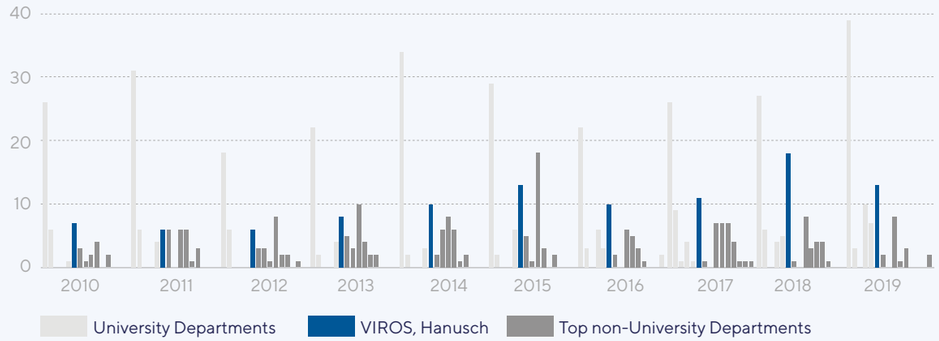
266.4 Impact factor (2010-2019)

VIROS PUBLICATIONS



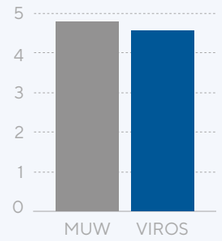
NUMBER OF PEER-REVIEWED PUBLICATIONS 2010-2019 AUSTRIAN DEPARTMENTS OF OPHTHALMOLOGY

Source: PubMed, original articles, search for institution, chief and 3-4 main authors



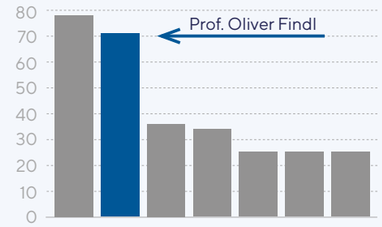
PUBLICATIONS PER MEDICAL DOCTOR

Sources: PubMed 2010-2019, No. of doctors: Ärztekammer Wien (MUW - Medical Uni of Vienna)



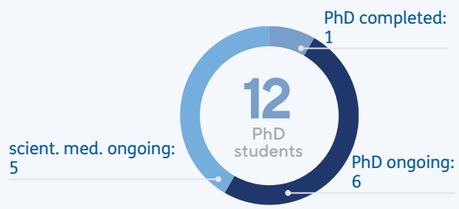
H-INDEX PUBLICATION PRODUCTIVITY AND CITATION IMPACT OF CURRENT CHIEFS OF AUSTRIAN DEPARTMENTS OF OPHTHALMOLOGY (TOP 7)

Source: google scholar, software "publish or perish", 3/2020



MASTER THESIS

PHD/DR. SCIENT- MED.



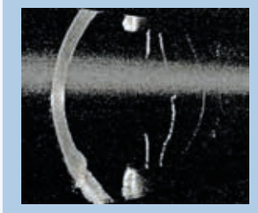
Cataract surgery

Clinical research in the field of cataract and lens surgery is the primary focus of VIROS. Cataract surgery is one of the most common surgical procedures worldwide. During surgery, the cloudy crystalline lens is removed and replaced by an artificial intraocular lens (IOL). VIROS was and is involved in several projects to further improve outcomes and safety of cataract surgery. Although the number of published VIROS papers in the field of cataract is large, we would like to emphasize on a few main projects that lead to novel devices or methods in the field of cataract surgery.

INTRA-OPERATIVE OCT

One of the main achievements was the development of a novel intra-operative IOL power calculation concept using intra-operative optical coherence tomography (i-OCT) technology. This method uses a prototype OCT set-up integrated into the operating microscope for imaging of the aphakic eye to predict the position of the IOL post-operatively. This concept was shown to be successful and was published and patented together with Carl Zeiss Meditec AG.
We have been able to show that the aphakic measurements with i-OCT result in a better prediction of the postoperative IOL position and thus should result in less refractive surprises, especially in short and long eyes. Additionally, it is possible to get intra-operative axial length measurements to allow precise power calculation in eyes where optical biometry was not possible before surgery such as in white cataracts or children.

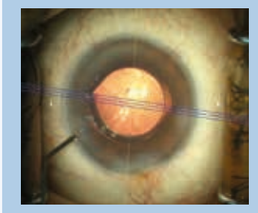
Hirnschall N, Amir-Asgari S, Maedel S, Findl O. Predicting the postoperative intraocular lens position using continuous intraoperative optical coherence tomography measurements. Investigative ophthalmology & visual science 2013; 54(8): 5196-203.
Hirnschall N, Norrby S, Weber M, Maedel S, Amir-Asgari S, Findl O. Using continuous intraoperative optical coherence tomography measurements of the aphakic eye for intraocular lens power calculation. The British journal of ophthalmology 2015; 99(1): 7-10.



ALIGNING TORIC IOLS

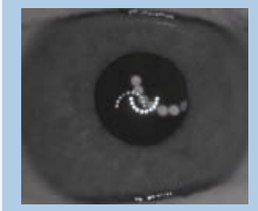
One major source of error when using toric IOL is its misalignment. Misalignment may result from inaccuracies of pre-operative marking of the cornea, intra-operative misalignment and post-operative rotation of the IOL. Pre-operative marking of the cornea can be avoided, if an automated marking system is used. VIROS did the alpha- and beta-testing of a now commercialized system and was one of the first institutes worldwide that used augmented reality for intra-operative alignment of toric IOLs.
An image of the eye is taken prior to cataract surgery and the limbal vessels are used to determine the required orientation of the toric IOL during surgery.

Varsits RM, Hirnschall N, Döller B, Findl O. Evaluation of an intraoperative toric intraocular lens alignment system using an image-guided system. J Cataract Refract Surg. 2019 Sep;45(9):1234-1238.



IOL CENTRATION AND TILT

In cooperation with the optical research group of Pablo Artal in Murcia, Spain, we performed several studies using a Purkinje meter assessing tilt and decentration of several IOL designs available. The Purkinje meter device was further developed to measure pseudophakodonesis and to some extent phakodonesis by using a moving light source. We intend to predict intraoperative zonule dialysis as well as postoperative subluxation.



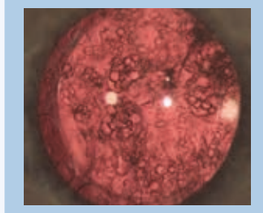
STRESS DURING SURGERY

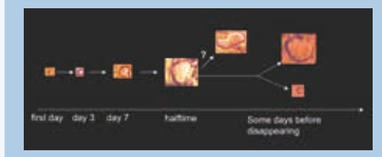
Although cataract surgery is a safe procedure, patients and also surgeons (depending on their experience) have stress before and during surgery. VIROS started studies assessing stress by measuring different parameters, such as heart-rate and its variability, muscle tone and sweat production. Questions we are trying to answer in ongoing studies are why patients usually experience the surgery of the second eye as more uncomfortable compared to the first eye and furthermore, how stressful the different steps of cataract surgery are for the learning surgeon at different experience levels.

POSTERIOR CAPSULE OPACIFICATION

A major topic since day one of VIROS was exploring after-cataract, or posterior capsule opacification (PCO). It decreases visual quality years after uneventful cataract surgery. We explored the natural course of regeneratory PCO by tracking Elschnig pearls short- and long-term as well as after a low-energy Nd:YAG-laser treatment that was developed to polish the posterior lens capsule without opening it.

Findl O, Neumayer T, Hirnschall N, Buehl W. Natural course of Elschnig pearl formation and disappearance. Investigative ophthalmology & visual science 2010; 51(3): 1547-53.
Hirnschall N, Neumayer T, Buehl W, Findl O. Reproducibility of an analysis software for qualitative observation of Elschnig pearls. Ophthalmic surgery, lasers & imaging : the official journal of the International Society for Imaging in the Eye 2010; 41(5): 507-11.





READING ASSESSMENT

Visual quality after cataract surgery – more than visual acuity: reading is a complex process. It requires a good retinal image. Reading speed slows down when the understanding is difficult, which is why reading one's mother tongue generally is faster than reading a foreign language. Reading skill is therefore influenced by visuo-motor and cognitive (i.e. linguistic, personality, learning, ageing) factors. VIROS together with the University of Crete uses a modern high-speed eye tracking device to assess the influence of different IOLs on reading quality.

Myopic pseudophakic retinal detachment study (Myopred)

Follow-up:
5 years

Number of patients:
618

INFLUENCE OF POSTERIOR VITREOUS DETACHMENT ON RETINAL DETACHMENT AFTER LENS SURGERY IN MYOPIC EYES

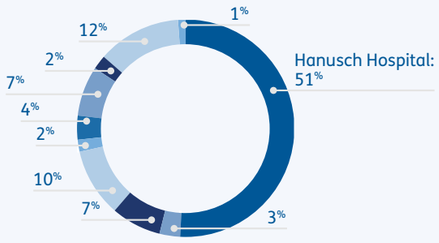
After cataract surgery there is an increased risk of developing a pseudophakic retinal detachment (RD). Especially myopic patients have a higher risk of RD compared to the general population.

The aim of this multicenter study is to document the presence and/or post-operative development of posterior vitreous detachment (PVD) before surgery and to assess its influence on the incidence of retinal detachment in myopes in a time period of 3 and 5 years after lens surgery.

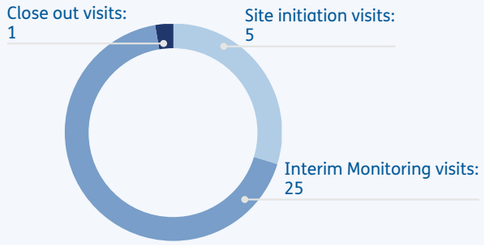
The study was submitted and is coordinated by VIROS with Prof. Findl as principal investigator. It is funded through a Clinical Research Award by the European Society of Cataract & Refractive Surgeons (ESCRS).

ESCRS MYOPRED ESCRS Study

PATIENT RECRUITMENT / SITE



MONITORING VISITS CARRIED OUT BY VIROS STAFF UNTIL 12/2019



Myopia included:
>25 mm
axial length

PVD detected by fundoscopy, spectral domain **OCT** and /or ultrasound

11 trial centers in **6** countries

Austria

OLIVER FINDL (PI)
Hanusch Hospital Vienna
(Sponsor)

MICHAEL AMON
Academic Teaching Hospital
of St. Johns Vienna

DOMAGOJ IVASTINOVIC
Medical University of Graz
(Reading Center)

Belgium

MARIE-JOSÉ TASSIGNON
University of Antwerp

JEROME VRYGHEM
Brussels Eye Doctors –
Clinique du Parc Leópold

Spain

FRANCISCO POYALES
IOA Madrid Innova Ocular

JOSE L. GUELL
IMO Instituto de
microchirurgica ocular

ALVARO FERNANDEZ
Vega Sanz - Instituto Oftalmológico Fernández-Vega

Sweden

BJÖRN JOHANSSON
Linköping University Hospital

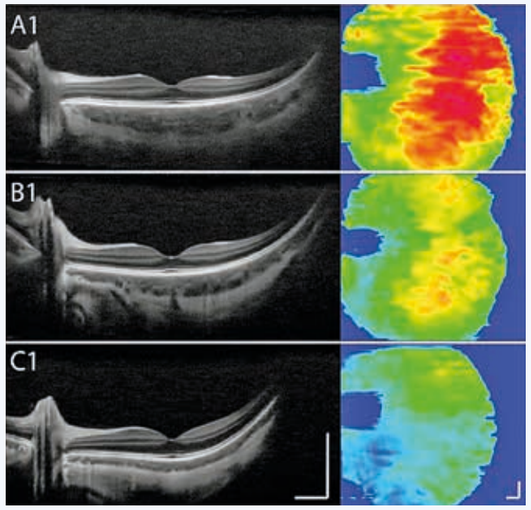
Norway

KJELL GUNNAR GUNDERSEN
IFOCUS eyeklinikk

Netherlands

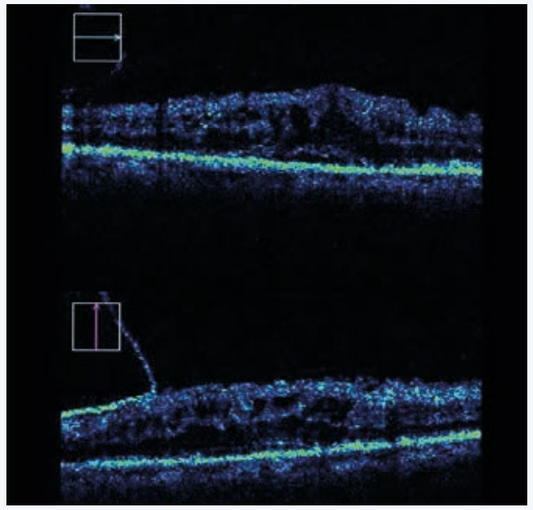
RUDY NUIJTS
University Hospital Maastricht

Other topics



MYOPIA

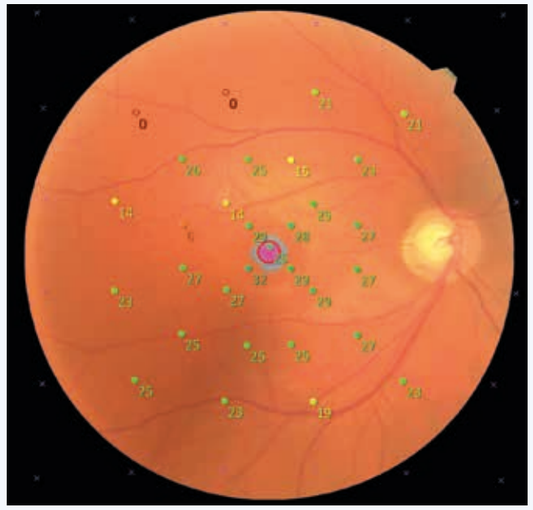
Myopia is a widespread disorder with increasing prevalence. Despite extensive research, its pathogenesis is still poorly understood. In animal models the image plane of the retina can be moved forward and backward due to changes in choroidal thickness. In a recent study we assessed the changes of choroidal thickness in myopic and non-myopic subjects in the presence of a focused and a defocused image. A novel ultra-high resolution OCT was used.



VITREORETINAL SURGERY

VIROS was one of the first institutes working with intra-operative OCT long before this technology was commercialized. This technology allows better visualization of the macula during surgical procedures. In several studies we have shown the potential of i-OCT for ILM-peeling and the effect of peeling on microscotoma as assessed with microperimetry.

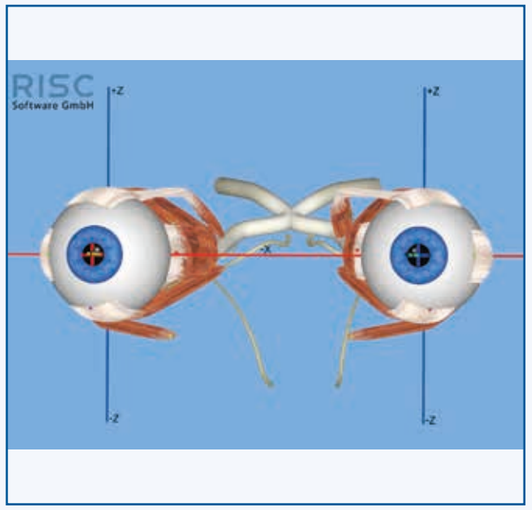
Leisser C, Hirnschall N, Palkovits S, Doeller B, Kefer K, Findl O. Intraoperative Optical Coherence Tomography-Guided Membrane Peeling for Surgery of Macular Pucker: Advantages and Limitations. Ophthalmologica. 2018 Nov 9:1-7.
Leisser C, Palkovits S, Hirnschall N, Ullrich M, Hienert J, Zwickl H, Georgiev S, Findl O. One-Year Results after Internal Limiting Membrane Flap Transposition for Surgical Repair of Macular Holes with Respect to Microperimetry. Ophthalmic Res. 2018 Jun 22:1-5.



GLAUCOMA

Usually glaucoma and potential glaucoma patients are followed up using visual field testing and OCT scanning of the optic disc. VIROS investigates on novel approaches, such as microperimetry to follow-up patients and to develop prediction algorithms using different measurement methods. Another focus of our research is on new microsurgical glaucoma surgery (MIGS) devices.

Leisser C, Palkovits S, Hirnschall N, Georgiev S, Findl O. Reproducibility of Microperimeter 3 (MP-3) Microperimetry in Open-Angle Glaucoma Patients. Ophthalmic Res. 2019 Aug 20:1-7.



STRABISMUS

Strabismus is not only related with reduced functional vision, but also sometimes stigmatization of the patients in society. VIROS was deeply involved in the translation of questionnaires and their evaluation. Furthermore, an algorithm for an advanced calculation for strabismus surgery was developed and tested in a recent study.

Basic science

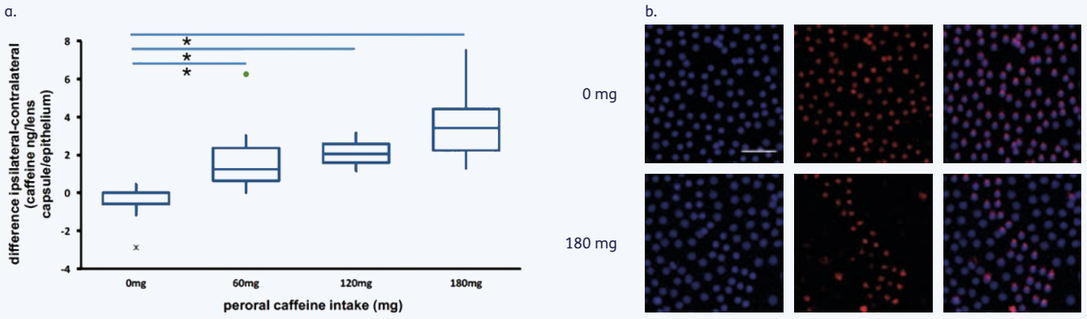


Fig. 1: a. Caffeine concentration in lens epithelial cells increases with higher amounts of peroral caffeine intake.* b. 180 mg of peroral caffeine reduces the number of apoptotic cells compared to lens capsules without (0 mg) peroral caffeine intake. blue: Hoechst staining (cell nuclei), red: TUNEL staining (apoptotic cells), scale bar is 50 µm.
*Kronschläger M, Stimpfl T, Ruiß M, Hirnschall N, Leisser C, Findl O. Pharmacokinetics of caffeine in the lens capsule/epithelium after peroral intake: a pilot randomized controlled study. Invest Ophthalmol Vis Sci. 2018;59:1855-1860.

CAFFEINE AND CATARACT

As a worldwide dietary consumed nutrient, we have analysed the pharmacokinetics of caffeine in the human eye. Caffeine is a known scavenger of free radical oxygen with high antioxidant ability. Several experimental and epidemiological studies suggest that caffeine might have a protective effect against diseases caused by oxidative stress like cataracts. We showed that peroral caffeine intake led to accumulation of caffeine in lens epithelial cells (LECs) as well as in the vitreous body of the eye. Furthermore, peroral caffeine intake led to a significant reduction in ultraviolet induced apoptosis in lens epithelial cells (Fig. 1)

POSTERIOR CAPSULE OPACIFICATION

The basic research of our institute focuses on the prevention and analysis of the underlying causes of posterior capsule opacification (PCO), which is one of the most common complications seen after cataract surgery. In one study, we are assessing the effect of statins to stop cell proliferation and their potential to prevent PCO.

Since it appears that the degree of PCO may also depend on the proliferation rate of lens epithelial cells that remain in the capsular bag after surgery, we are attempting to assess the factors that determine this proliferation rate. We use the anterior lens capsule, which is removed during cataract surgery, to assess how much the proliferation rate of LECs differs between the eyes of the same patients in an in-vitro model and how it correlates with the degree of PCO in vivo (Fig. 2).

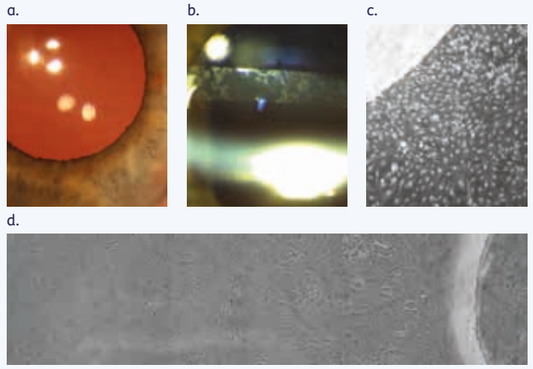


Fig. 2:
a. Retroillumination photograph showing cell growth on the posterior capsule 6 months post-surgery. b. Slitlamp image of cell growth on the posterior capsule 3 months after cataract surgery. c. High magnification picture of lens capsule edge with proliferating lens epithelial cells in a cell culture dish. d. Overview of LEC outgrowth from the lens capsule (asterisk) in-vitro after 3 weeks.

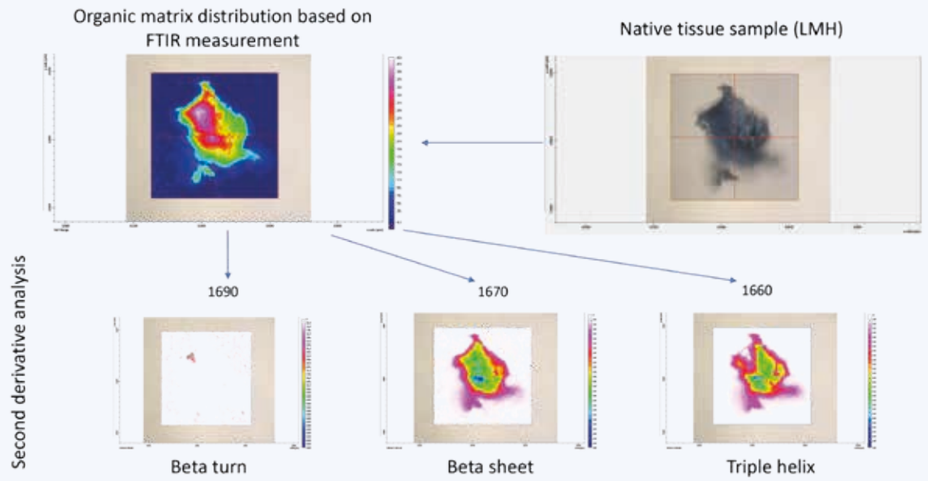
REVERSING CATARACT

Another recent project compares pharmacological interventions, that were reported to be effective in reversing cataract (e.g. lanosterol, rosmarinic acid, etc.), in an in-vitro model.

EPIRETINAL MEMBRANE

A current study looks at the role of hyalocyte proliferation from probes of epiretinal membranes (ERM), a disorder that leads to vision loss and metamorphopsia. Epiretinal membrane and/or internal limiting membrane specimens harvested during vitreoretinal surgery are observed in cell culture for possible proliferation of cells in or on the surface of these tissues.

In another project, epiretinal membranes were obtained during surgical removal and analysed for their molecular composition using Fourier Transformed Infrared Microspectroscopy (FTIR). This technique analyses probes by absorption of infrared light due to molecules and their states of vibration in the probe. The results of this analysis may give hints for the origin of the epiretinal membrane. (Fig. 3).



Analysis of the molecular composition of an epiretinal membrane, obtained during surgery, with Fourier Transformed Infrared Microspectroscopy (FTIR).

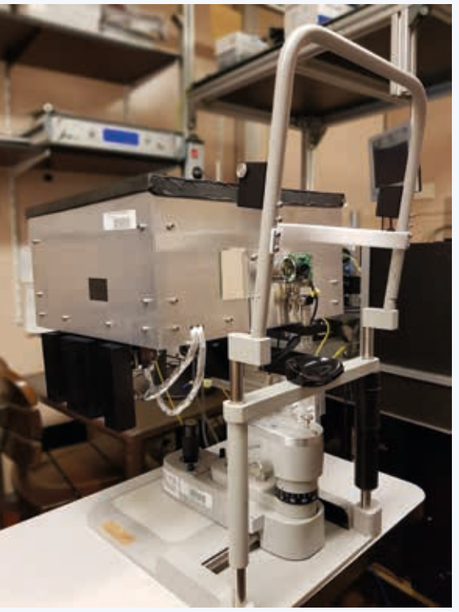
Collaborations

ULTRA-HIGH RESOLUTION OCT FOR VISUALIZING THE CORNEA AND THE TEARFILM

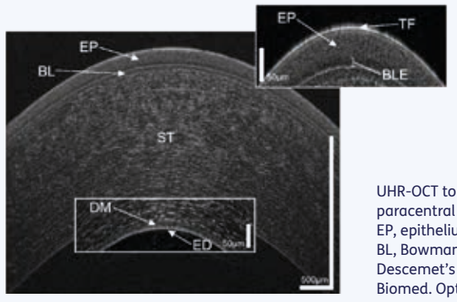
Department of Clinical Pharmacology and Center for Medical Physics and Biomedical Engineering (CMPBE), Medical University of Vienna.
Univ.-Prof. Gerhard Garhöfer, MD,
Univ.-Prof. René Werkmeister, PhD,
Univ.-Prof. Leopold Schmetterer
PhD student: Andreas Schlatter, MD (50% at VIROS)

The research carried out within the scope of this cooperation is performed employing an ultrahigh-resolution anterior segment optical coherence tomography (OCT) device that has been built by the Center for Medical Physics and Biomedical Engineering (CMBPE). The system works at a central wavelength of 800 nm, provides resolutions of 1.2 µm and 20 µm in the axial and lateral direction at a rate of 140 000 A-scans/s, and allows visualization and quantitative measurements of all corneal layers as well as the precorneal tear film [1,2,3].
Prof. Doreen Schmidl, MD, PhD has investigated the effect of instillation of artificial tears on tear film thickness in eyes with moderate to severe dry eye syndrome. [3]

In our collaborative project, the system is used to detect postoperative graft detachments after Descemet Membrane Endothelial Keratoplasty (DMEK) or Descemet Stripping Automated Endothelial Keratoplasty (DSAEK) surgery. OCT measurements are performed before and at different time points after surgery and the area of graft detachment will be determinded from the acquired volumetric image dataset and correlated with visual acuity. All patients are selected in the Hanusch Hospital and examined at the section for ophthalmo-pharmacology at the Department of Clinical Pharmacology as well as the CMPBE, this allows us to strengthen scientific output within the framework of a scientific cooperation.



UHR-OCT, © Prof. René Werkmeister, PhD



UHR-OCT tomogram of the central and paracentral zone of the cornea. TF, tear film; EP, epithelium; BLE, basal layer of epithelium; BL, Bowman's layer; ST, corneal stroma; DM, Descemet's membrane; ED, endothelium. (from Biomed. Opt. Express, 2017; (8):1221-1239)

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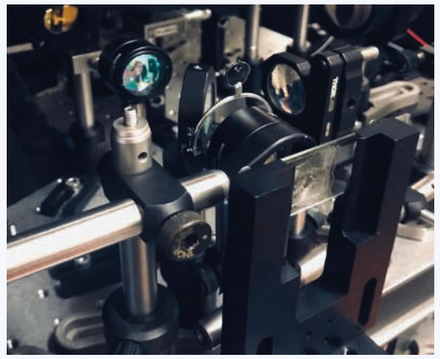
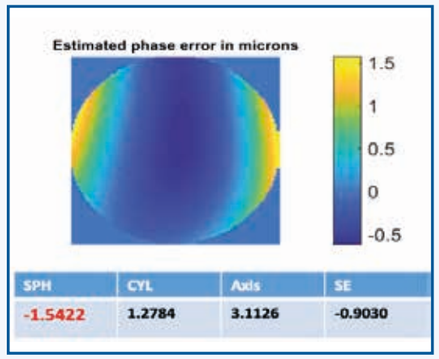


OCT setup on optical bench



Wavefront calculated from OCT signal

SWEPT SOURCE OCT BASED OPHTHALMIC DIGITAL WAVEFRONT ABERROMETRY

Center for Medical Physics and Biomedical Engineering, Medical University of Vienna
Univ.-Prof. Dr. Rainer Leitgeb,
Abhishek Kumar, PhD
PhD student: Stefan Georgiev, MD (50% at VIROS)

Optical coherence tomography (OCT) has been an invaluable diagnostic tool for ophthalmic imaging in the diagnostic assessment of macular degeneration, glaucoma, and many other diseases. Another breakthrough was the 10-fold increase in sensitivity compared to ultrasound, which replaced the latter as the new gold-standard for ocular biometry in cataract surgery.

Along with continuous improvements in structural sensitivity, the implementation of techniques adapted from astronomy have further allowed the detection and correction of optical distortions, in order to enable cellular resolution of human retinal layers [1],[2]. By virtue of being able to quantify these optical errors, the objective assessment of human vision is possible. This may be implemented with the already well-established use of optical biometry and diagnostic imaging, in order to allow for a more intertwined relation between structural and functional information in cataract and refractive surgery. This should allow the extraction of higher order aberrations directly with an OCT setup [3].

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Partners

ACADEMIC PARTNERS

INDUSTRY PARTNERS / SPONSORS

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● = cataract ● = retina ● = glaucoma ● = other

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= cataract = retina = glaucoma = other

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2013

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2012

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J Cataract Refract Surg. 2012 Apr;38(4):655-9.

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2011

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CRNEJ A, HIRNSCHALL N, NISHI Y, GANGWANI V, TABERNERO J, ARTAL P, FINDL O.
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PRINZ A, NEUMAYER T, BUEHL W, VOCK L, MENAPACE R, FINDL O, GEORGOPOULOS M.
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2010

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HIRNSCHALL N, NEUMAYER T, BUEHL W, FINDL O.
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= cataract = retina = glaucoma = other

Theses

HABILITATIONS

PD DR. ANA PRINZ
Safety and clinical outcomes of modern cataract surgery, *2014*

PD DR. NINO HIRNSCHALL
Factors influencing visual quality after uncomplicated cataract surgery, *2018*

PHD / DR. SCIENT. MED. 2010-2019

Completed

DR. NINO HIRNSCHALL
Reducing refractive errors after cataract surgery due to advancement of predictability and measurability of the intraocular lens position in all three dimensions -PhD , *2014*

Ongoing

DR. SAHAND AMIR-ASGARI
Using an intra-operative spectral-domain optical coherence tomography device for predicting the intraocular lens position - *Dr. scient. med.*

DR. MARIA FICHTENBAUM
The human retinal autofocus – Choroidal thickness changes in response to defcous and elevation of intraocular pressure in myopia - *PhD*

DR. ANDREEA DANA FISUS
Bilateral and age-dependent differences in posterior capsule opacification in vivo compared to an in-vitro model - *PhD*

DR. STEFAN GEORGIEV
Digital wavefront sensing for depth resolved volumetric aberrometry - *PhD*

DR. JULIUS HIENERT
Assessing the astigmatism reducing effect with toric intraocular lenses in eyes with low astigmatism - *Dr. scient. med.*

DR. SOPHIE MÄDEL
Measuring capsular bag performance of different IOL designs after cataract surgery with different anterior segment devices - *Dr. scient. med.*

DR. ANDREAS SCHLATTER
Assessing the effect of therapeutic and diagnostic eyedrops on tear film thickness using ultra high-resolution optical coherence tomography - *PhD*

DR. MARLIES ULLRICH
Development of posterior vitreous detachment after lens surgery in myopic eyes - *PhD*

DR. RALPH VARSITS
Cataract quantification using swept source base optical coherence tomography: a pilot study - *Dr. scient. med.*

DR. HANNAH ZWICKL
Imaging of the vitreous body after cataract surgery using optical coherence tomography - *PhD*

MASTER THESES 2010-2019

Completed

DR. SAHAND AMIR-ASGARI
Impact of rotating lens cortex fragments on the endothelial cell outcome after phacoemulsification, *2013*

DR. JASMIN KATRIN MOTAABBED
Reducing the use of reading spectacles in pseudophakic patients, *2015*

DR. SANAZ FARROKHI
Predictability of the IOL position using an intra-operative OCT, *2016*

DR. KRISTINA STJEPANEK
Protecting the corneal endothelium during cataract surgery using the anterior capsule: a prospective randomised double-masked study

DR. STEFAN GEORGIEV
Fundus-related microperimetry in glaucoma: reproducibility and comparison with standard automatized perimetry, *2018*

Ongoing

ULRICH GRAF
Improvement of the refractive outcome after implantation of a toric intraocular lens

DAVID JOHLER
Analysis and comparison of axial length before and after cataract surgery

BACHELOR THESES

KATHARINA MALEK (ORTHOPTICS)
Das Verhältnis zwischen der Augenlänge und der Dosierung der Schieloperation an den horizontalen Augenmuskeln.

VINZENZ RUDNAY
Efficacy and effectiveness of modern treatment options for patients with relapsing remitting multiple sclerosis.

PATENTS

Method, ophthalmic measuring system and computer-readable storage medium for selecting an intraocular lens (EP2796087B1, US20180317765A1)

Method for selecting an IOL on the basis of the prediction of the anatomical, post-operative position and orientation thereof (US20180368970A1, WO2017103145A1)

Invited lectures

OLIVER FINDL

- Pearce Medal, United Kingdom & Ireland Society of Cataract & Refractive Surgeons (UKISCRS), 2019
- Binkhorst Medal, American Society for Cataract and Refractive Surgery (ASCRS), Washington D.C., USA, 2018
- Keynote Lecture, Swiss Academy of Ophthalmology, 2019
- Honorary Guest Speaker, Beirut Eye & ENT Specialist Hospital, Beirut, 2018
- Inaugural Peter Barry Memorial Lecture, Royal Victoria Eye & Ear Hospital, Dublin, Ireland, 2017
- Keynote Lecture, Belgian Society of Cataract & Refractive Surgeons (BSCRS), Brussels, Belgium, 2017
- Honorary Member, Hungarian Society of Intraocular Lens Implantation and Refractive Surgery (SHIOL), 2016
- Lim Lecture, Asia-Pacific Association of Cataract and Refractive Surgeons (APACRS), 2016
- Gold Medal Lecture, Australasian Society of Cataract and Refractive Surgeons (AUSCRS), 2016
- Power List “Top 100 Ophthalmologists” Award Ribbon 2014, 2018 and 2020

STEFAN GEORGIEV

- Wissenschaftspreis der ÖOG, 2019

NINO HIRNSCHALL

- Power list “Top 40 under 40", 2015
- Peter Barry Fellowship Grant, 2018
- Wissenschaftspreis der ÖOG, 2019

STEFAN PALKOVITS

- Förderpreis des "Spektrum der Augenheilkunde", 2016
- Wissenschaftspreis der ÖOG, 2018

MANUEL RUISS

- ÖOG Wissenschaftspreis, 2019

Oliver FINDL
Prim. Ao. Univ.-Prof. Dr. med. univ., MBA, FEBO

EDUCATION
- University of Vienna
- MBA Health Care Management, Medical University of Vienna / FHW Berlin

PROFESSIONAL EXPERIENCE
- Children's Hospital, Harvard Medical School, Boston, MA, USA
- Ophthalmology, Medical University of Vienna, Vienna General Hospital
- Clinical Pharmacology, Medical University of Vienna
- Attending Vienna General Hospital 1999-2006
- Fellowship Vitreoretinal Surgery, Moorfields Eye Hospital, London, UK, 2006-2007
- Consultant Ophthalmic Surgeon, Moorfields Eye Hospital, London, UK, 2006-2014
- Chief of Department of Ophthalmology, Hanusch Hospital, since 2009

FUNCTIONS
- Secretary of the European Society of Cataract and Refractive Surgeons (ESCRS) since 2011
- Board member of ESCRS 2005-2011
- Treasurer of the Austrian Ophthalmological Society (ÖOG) since 2012
- Editorial board member of the Journal of Cataract and Refractive Surgery (JCRS) since 2005 and Section Editor 2008-2012
- International board member of EuroTimes since 2006
- International board member of Eyeworld since 2017
- Founder and chief of the Vienna Institute for Research in Ocular Surgery (VIROS), a Karl-Landsteiner Institute since 2010
- Member of the cataract committee of the ÖOG since 2005
- President of the Viennese Ophthalmological Society (WOG) 2005-2006
- Examiner of the European Board of Ophthalmology (EBO) since 2009

MEDALS, INVITED LECTURES
- Pearce Medal, United Kingdom & Ireland Society of Cataract & Refractive Surgeons (UKISCRS), 2019
- Binkhorst Medal, American Society for Cataract and Refractive Surgery (ASCRS), Washington D.C., USA, 2018
- Keynote Lecture, Swiss Academy of Ophthalmology, 2019
- Honorary Guest Speaker, Beirut Eye & ENT Specialist Hospital, Beirut 2018
- Inaugural Peter Barry Memorial Lecture, Royal Victoria Eye & Ear Hospital, Dublin, Ireland, 2017
- Keynote Lecture, Belgian Society of Cataract & Refractive Surgeons (BSCRS), Brussels, Belgium, 2017
- Honorary Member, Hungarian Society of Intraocular Lens Implantation and Refractive Surgery (SHIOL), 2016
- Lim Lecture, Asia-Pacific Association of Cataract and Refractive Surgeons (APACRS), 2016
- Gold Medal Lecture, Australasian Society of Cataract and Refractive Surgeons (AUSCRS), 2016
- Power List, one of the "Top 100 Ophthalmologists" Award Ribbon in 2014, 2018 und 2020

RESEARCH OUTPUT
- h-index 71 (1/2020)
- Peer-reviewed publications: 273 (PubMed 1/2020)

Nino HIRNSCHALL
OA, Priv.-Doz., Dr. med. univ., PhD, FEBO

EDUCATION
- MD, Medical University of Vienna
- PhD, Medical University of Vienna, 2010-2014

PROFESSIONAL EXPERIENCE
- Research Fellowship, Moorfields Eye Hospital, London, UK, 2008-2009
- Researcher, VIROS 2010-2011
- Fellowship in Cornea, Sydney Eye Hospital, Sydney, Australia, 2018

FUNCTIONS
- Hospital representative in the Austrian Ophthalmological Society (ÖOG)
- Member of the Research Committee. ESCRS
- Board Member Eurotimes
- Lecturer Medical University of Vienna and Danube University Krems
- Charitable work in the Neunerhaus since 2018

MEDALS, INVITED LECTURES
- Power list "Top 40 under 40" 2015
- ESCRS Peter Barry Fellowship Grant 2018
- Jan Worst Lecture, Netherlands IntraOcular Implant Club (NIOIC), 2015

RESEARCH OUTPUT
- Peer-reviewed publications: 74 (PubMed 1/2020)

Stefan PALKOVITS
OA, Priv.-Doz., Dr. med. univ., PhD, FEBO, FICO

EDUCATION
- MD, Medical University, Vienna
- PhD, Medical Unviersity of Vienna, 2010-2013

PROFESSIONAL EXPERIENCE
- Universitätsaugenklinik, Medical University Graz, 2013-2015
- Resident, Hanusch Hospital, 2015-2018
- Attending, Hanusch Hospital, since 2018

FUNCTIONS
- Head of the dry eye disease unit
- Member of the ocular surface disease committee ÖOG
- Chairman of the Austrian Young Ophthalmologists, ÖOG 2017-2019
- Secretary of the ÖOG since 2017
- Member of the Education Committee, ESCRS
- Member of the Education Committee, OÖG

MEDALS, INVITED LECTURES
- Award of "Spektrum der Augenheilkunde", 2016
- Science Award of the ÖOG, 2018

RESEARCH OUTPUT
- Peer-reviewed publications: 30 (PubMed 1/2020)

Martin KRONSCHLÄGER
OA, Dr. med. Univ., PhD, MHBA, FEBO

EDUCATION
- Medical University of Vienna
- Karolinska Institute, Stockholm,
- Monash University, Melbourne, Australia

PROFESSIONAL EXPERIENCE
- PhD, Uppsala Universty, 2014
- Specialist Physician, Hanusch Hospital, 2015-2018
- Health Business Administration, Friedrich Alexander University Erlangen-Nürnberg, 2017
- Attending, Hanusch Hospital since 2018

RESEARCH OUTPUT
- Peer-reviewed publications: 27 (PubMed 1/2020)

Christoph LEISSER
OA, Dr. med univ. et scient med.

EDUCATION
- MD, University of Vienna
- PhD, University of Vienna

PROFESSIONAL EXPERIENCE
- Resident, St. John's Hospital, Vienna
- Attending, State Hospital Bruck, 2006
- Attending, Clinic Wels, 2007
- Attending, Hospital Wr. Neustadt, 2008
- Senior Physician, Clinic Köln Merheim, 2010
- Senior Physician, Hanusch Hospital since 2013
- Deputy of Department of Ophthalmology, Hanusch Hospital

RESEARCH OUTPUT
- Peer-reviewed publications: 26 (PubMed 1/2020)

Natascha BAYER
MSc

EDUCATION
- Master of Science in "Biomedical Engineering", University of Applied Sciences Technikum Wien, 2009-2014
- Quality & Regulatory Affairs Manager – Junior, TÜV, 2019

PROFESSIONAL EXPERIENCE
- Lecturer and Researcher, University of Applied Sciences Technikum Wien, 2014-2019
- Clinical Research Associate (in Training) and Research Fellow, VIROS, since 2019

Birgit DÖLLER
MSc

EDUCATION
- Academy for Orthoptics, Vienna, 2006-2009
- Masters Program „Neurorehabilitation", Donau-University Krems, 2013-2016

PROFESSIONAL EXPERIENCE
- Research Fellow and Orthoptist, VIROS, since 2014

Andreea Dana FISUS
Dr. med.

EDUCATION
- University of Medicine and Pharmacy, Tg Mures, Romania, MD, 2013
- Master Degree in Medical-Pharmaceutical Scientific Research, University of Medicine and Pharmacy, Tg Mures, Romania, 2015
- PhD Studies, University of Medicine and Pharmacy, Tg Mures, Romania, since 2015
- ICO Certificate, Clinical Science, Basic Science, Optics and Refraction, 2017/18

PROFESSIONAL EXPERIENCE
- Residency, Ophthalmology, Mures County Hospital, Tg Mures, Romania, 2014-2018
- Research Fellow, VIROS, since 2019

Stefan GEORGIEV
Dr. med. univ.

EDUCATION
- Medical University of Vienna, MD
- Université Pierre Marie et Curie (Paris VI), 2017

PROFESSIONAL EXPERIENCE
- Scientific Assistant, Ophthalmology, Hanusch Hospital, Vienna, since 2015
- Research Fellow, VIROS and Center for Medical Physics and Biomedical Engineering, Medical Uni Vienna, since 2017

Magdalena MUNDIGLER
BSc

EDUCATION
- Bachelor of Science Environment and Bio-Resources Management, University of Natural Resources and Life Sciences, Vienna
- Master of Science Phytomedicine, University of Natural Resources and Life Sciences, Vienna, since 2017
- Pharmaceutical Sales Representative, Pharmig Academy, Vienna, 2017
- Clinical Monitoring Certificate, HCC Group, 2017
- Pharmacy, University of Vienna, since 2018
- Certified Data Protection Officer, since 2019

PROFESSIONAL EXPERIENCE
- Financial Manager and Clinical Research Associate, VIROS, since 2017

Magdalena NENNING
Dr.med.univ

EDUCATION
- Medical University of Vienna, MD, 2018

PROFESSIONAL EXPERIENCE
- Hietzing Hospital, Vienna, 2016
- Kent and Canterbury Hospital, UK, 2018
- State Hospital Feldkirch, 2018
- Research fellow, VIROS, since Nov 2019
- Resident at Hanusch Hospital, Vienna, since Nov 2019

Caroline PILWACHS

EDUCATION
- Academy for Orthoptics, Vienna, 2003-2006
- Quality Management Course, WIFI, 2011

PROFESSIONAL EXPERIENCE
- Orthoptist, Practice Dr. Mullay, Villach, 2006-2008
- Administration and Quality Management, Ophthalmology, Medical University Vienna, 2008-2016
- Study Coordinator, Research Fellow and Orthoptist, VIROS, since 2016

Manuel RUIß
MSc

EDUCATION
- Academy for Orthoptics, Vienna, 2004-2007
- Bachelor of Science "Biomedicine and -technology", University of Veterinary Medicine, Vienna
- Master of Science "Molecular Biology", University of Vienna

PROFESSIONAL EXPERIENCE
- Orthoptist, Practice Dr. Seher, 2015-2017
- Research Fellow and Orthoptist, VIROS, since 2017

Andreas SCHLATTER
Dr. med. univ.

EDUCATION
- Medical University of Innsbruck, MD, 2019
- PhD Studies, Medical University of Vienna, since 2019

PROFESSIONAL EXPERIENCE
- Research Fellow, VIROS and Department of Clinical Pharmacology, Section of Ophthalmo-Pharmacology, Medical University of Vienna, since 2019