



ARVO 2018 Annual Meeting Emerging Trends and Hot Topics

Honolulu, Hawaii – In their own words, First Authors at the 2018 Annual Meeting of the Association for Research in Vision and Ophthalmology explain their findings. Their abstracts were designated as some of the newest and most innovative research being conducted in various specialties and are being presented on Thursday, May 3. To view abstracts, enter the program number or title in the "Search" field of the [Online Planner](#) or [mobile app](#).

Anatomy and Pathology/Oncology

5985. Recurrence prediction and usefulness of Mohs microscopic surgery in Chinese patients of eyelid sebaceous gland carcinoma: a retrospective cohort study of 238 patients. 11:45am

Local recurrence remains a major problem for the patients with SGC. Performing MMS in eyelid SGC is controversial. This nomogram provides improved individualized estimates for recurrence. MMS is recommended as the primary management for eyelid SGC. This model may promote precision medicine in clinical application and affect therapeutic decisions.

Eye Movements/Strabismus/Amblyopia/Neuro-Ophthalmology

5958. Attention is biased towards the fellow eye in strabismic amblyopia. 12:00pm

Conventional wisdom dictates that we tend to see better with both eyes than just one, but for those with amblyopia (or lazy eye), that is not the case. Amblyopia is a visual disorder that is caused by an abnormal sensory experience during early childhood, either by a misalignment of the eyes (strabismus) or a blurred image in one eye (anisometropia). Depending on the cause, processing in the brain required for tracking moving objects appears to be different. By focusing on the differences between the various causes for amblyopia, we can further our understanding of how sensory experience guides processing in the brain, as well as develop treatments tailored for the different types of amblyopia.

5789 - C0076. Assessing visual acuity – test-retest repeatability and level of agreement between the electronic ETDRS chart (E-ETDRS), optokinetic nystagmus (OKN), and sweep VEP. 8:15am

The purpose of the project is to develop an easy-to-use device that could help eye doctors and optometrists better measure visual function in children and cognitively impaired adults. It does not require verbal/subjective response from patients. It is based on measuring a naturally occurring eye movement called optokinetic nystagmus (OKN), an eye motion that occurs when people watch continuously moving patterns.

Glaucoma

6027. Robot assistants for perimetry: Patient experience and performance. 11:00am

Performing visual field tests can be boring. Close human supervision of these tests is ideal, but is not always possible. This study demonstrates that people like doing visual field tests in the presence of a humanoid robot. Such technology may make the experience more enjoyable for both patients and operators, which may in turn improve compliance and attitude towards perimetry. More satisfied patients and operators may lead to improved clinical outcomes.

5884 - C0171. Methods of analyzing chromatic pupillometry in glaucoma. 8:15am

Chromatic pupillometry is a noninvasive method of examination for ophthalmology, optometry and neurology. Our results show that glaucoma disease can be described according to its stages. Perhaps chromatic pupillometry can also be used for the early detection of glaucoma.

5888 - C0175. Influence of Music on Intraocular Pressure and Morphology of Schlemm's Canal: An SS-OCT Study. 8:15am

Glaucoma is the leading cause of irreversible blindness worldwide. To lower intraocular pressure (IOP) is to only method to prevent people from losing vision. However, current treatment cannot always achieve satisfactory effect on many patients, and thus we try to find alternative ways to help people with uncontrolled IOP. In this study, we found that music can be an effective tool and verified its efficacy by demonstrating the underlying mechanism. We hope music could be widely accepted in the treatment of glaucoma.

Retinal Cell Biology

5498 - A0167. Melanopsin phototransduction is repurposed by ipRGC subtypes to shape distinct visual circuits. 8:15am

This study examines how a new population of light-sensitive retinal cells send light information to the brain to influence vision. We use the mouse retina as a model system, and find a new pathway by which these retinal cells respond to light that helps shape the ability to see contrast.

Visual Psychophysics/Physiological Optics

5813 - C0100. Scattering extinction of human eye lenses and straylight. 8:15am

The crystalline lens of the human eye scatters part of the light entering the eye, causing the visual phenomenon of radiation of light seen around bright lights against a dark background. This radiation of light is the basis of much visual disturbance, in particular glare while driving at night, but also problems such as difficulty recognizing faces. In the present study it is determined how much of the light entering the eye is removed by scattering. For 15 lenses extracted from human donor eyes, aging 43 to 82 years, it was found that a total of around 15% of the light is scattered, but with much variation: a minimum of 5% was found, and a maximum of 77% for a lens with cataract.