Vancouver, Canada – In their own words, First Authors at the 2019 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 Sunday, April 28. To view abstracts, enter the program number or title in the “Search” field of the Online Planner or mobile app.

Anatomy and Pathology/Oncology

A0582. Distribution of retinal amyloid deposits in association with Alzheimer’s disease. 11:45am - 1:30pm

Alzheimer’s disease (AD) is the most common form of dementia which deposits proteins in plaques in the brain. These proteins can also be imaged in the retina, a tissue found at the back of the eye, of individuals with the disease. Due to the size, optical properties and location of the deposits in the retina, these deposits are able to be imaged in a living patient. Therefore, imaging of retinal deposits is a promising tool which may be used to diagnosis AD.

Retina

A0286. Quantity and morphology of inner retinal vasculature is reduced in intermediate Age-Related Macular Degeneration. 11:45am - 1:30pm

Macular degeneration is the leading cause of irreversible blindness worldwide and is known to involve changes to the blood supply to the outer portion of the retina. This study uses new, non-invasive imaging technology called OCTA (optical coherence tomography angiography) to see if changes also occur to blood supply to the inner retina. We found less blood vessels in the inner retina of eyes with macular degeneration as well as thinning of the remaining blood vessels. These new findings are important in developing new options for treatment and intervention in macular degeneration.

Visual Neuroscience

A0504. Fishing for neuroreparative strategies in the short-living Nothobranchius furzeri. 10:15am - 12:00pm

Due to a growing number of elderly, neurodegenerative diseases show an increasing prevalence and seriously constrain the life quality and overall wellbeing of these older patients. Intensive research
efforts are therefore focusing on mechanisms that trigger repair in the diseased central nervous system (CNS), a capacity that is unfortunately very limited in the adult human brain, especially in an aging environment. In contrast to humans, the short-living killifish has the remarkable ability to replace lost or damaged neurons in the adult CNS. Moreover, its fast aging shows characteristics that are similar to human aging, making this little fish an ideal model to study the effect of aging on the regeneration potential. While young killfish are perfectly capable to repair damage in the CNS, our findings show a striking decline in neuroreparative ability upon aging. Using the visual system of the killifish, we envision identifying the mechanisms that support successful optic nerve regeneration and unveiling new targets for reparative strategies in the diseased CNS.