UNIVERSITÄTS KLINIKUM TÜBINGEN

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INSTITUTE FOR OPHTHALMIC RESEARCH
FORSCHUNGSINSTITUT FÜR AUGENHEILKUNDE

OPHTHALMIC RESEARCH SYMPOSIUM

“Effects of anisometropia and aniseikonia on stereopsis”

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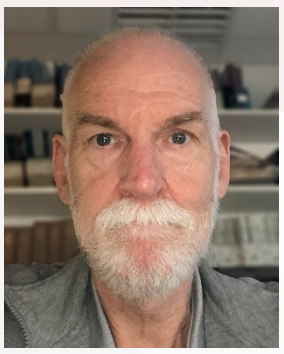
Stereopsis is the ability to perceive depth in visual space due to the sensory fusion of retinal images from both eyes. It is an important aspect of binocular vision. Stereoacuity is reduced when there is degraded visual information to an eye or abnormal processing along the visual pathway. It occurs also with anisometropia which is a difference in refraction between the two eyes of a person, and with aniseikonia which is where the images of the two eyes are perceived to be of different sizes or shapes.

We used a random dot stereogram which measures stereoacuity to threshold, and overcomes the limitations of previous studies that used clinical tests not always able to measure to threshold and with a limited number of measuring levels. Anisometropia was induced by spherical and cylindrical blurring lenses and aniseikonia was induced by magnifying lenses.

We hypothesized that, as stereopsis is a function of the lateral displacement of the eyes, optical factors with interocular effects in the horizontal meridian will have greater impact than those with effects in the vertical meridian. Some results supported this hypothesis, but interestingly others did not and possible reasons will be discussed.

Wednesday, 20 November 2019 – 9 am
Lecture Hall ENT-Hospital, Building 600, Level 2
Elfriede-Aulhorn-Straße 5



Professor Atchison received BScOptom, MScOptom and PhD degrees from the University of Melbourne and the DSc degree from the Queensland University of Technology (QUT). He has been at QUT for 35 years, where he teaches and researches in Ophthalmic and Visual Optics. He has written two books and over 250 refereed research papers. He is a recipient of the Glenn Fry Award of the American Academy of Optometry and a recipient of the H Barry Collin Research Medal of Australian Optometry. His current research interests include the Stiles-Crawford effect, retinal holography, effects of blur and magnification of stereopsis, and peripheral field aberrations and image quality.

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