Prospective Observational Study of Adult Convergence Insufficiency, Divergence Insufficiency, and Small-Angle Hypertropia (SAS1)

Investigators: Yi Pang, OD, PhD, Christine Allison, OD, Megan Allen, OD, and Kelly Yin, OD

This is a NIH-funded multi-center clinical study. The purpose of this study is provide data on the numbers, types and clinical characteristics of adult patients with CI, DI or HT who are seen by PEDIG investigators and are receiving certain types of treatments, and on the outcomes of those treatments over one year.

Funded by: NIH/NEI

Effectiveness of Orthokeratology on Preventing Myopic Progression in Optometry Students

Investigators: Stephanie Fromstein, OD, Elyse Chaglasian, OD, and Yi Pang, OD, PhD.

The purpose of this study is to determine the effectiveness of specialty rigid lenses (orthokeratology) in preventing myopia progression in optometry students in comparison to optometry students who wear spectacles and/or soft contact lenses over a period of 2 years.

Funded by: Illinois Society for the Prevention of Blindness and Illinois College of Optometry

Obtaining a stable 9 mm pupil (or larger) using a drug combination in patients between the ages of 30 – 50

Investigators: Rebecca Zoltoski, Ph.D., Daniel Roberts, O.D., Ph.D., Christina Morettin, O.D., Jasandeep Uppal, O.D., Jaana Ashtiani-Zarandi, Russell Lake, Thomas Ruiz, Nazli Sammak, Majid Moshirfar, M.D., Michele Avila, O.D., Steven Linn, O.D., Trey Fanning, Orry Birdsong, MD, Yasmyne Ronquillo, Vance Thompson, M.D., Douglas Wallin, O.D., Keith Rasmussen, O.D., Kayla Karpuk O.D., Samantha Nielson, Jason Meyer, Kristin Ford COA, Melissa Holm, Keeley Puls, CCRC, COA, OSC.

This study is interested in looking at how big the pupil can be using a combination of gel eye drops. We are conducting this study at three different locations in the United States: The Illinois College of Optometry/Illinois Eye Institute in Chicago, IL, Vance Thompson Vision in Sioux Falls, SD and Hoopes Vision in Draper UT.

Funded by: Lenticular Research Group, LLC

Amblyopia Treatment Study (ATS20) Binocular Dig Rush Game Treatment for Amblyopia

Investigators: Yi Pang, OD, PhD, Christine Allison, OD, Megan Allen, OD and Kelly Yin, OD

This is a NIH-funded multi-center clinical study. The purpose of this study is to compare the efficacy of 1 hour/day of binocular game play 5 days per week plus spectacle correction with spectacle correction only, for treatment of amblyopia in children 4 to <13 years of age.

Funded by: NIH/NEI

Intermittent Exotropia Study 5 (IXT5) A Randomized Clinical Trial of Overminus Spectacle Therapy for Intermittent Exotropia

Investigators: Yi Pang, OD, PhD, Christine Allison, OD, Megan Allen, OD and Kelly Yin, OD

The objectives of this randomized trial comparing overminus lens treatment to non-overminus (spectacles without overminus or spectacles with plano lenses) are to determine:

 The long-term on-treatment effect of overminus treatment on distance IXT control score (primary objective).

 The off-treatment effect of overminus treatment on distance IXT control score, following weaning and 3 months off treatment (secondary objective).

Funded by: NIH/NEI

Tangible Hydra-Peg™: A Promising Solution for Scleral Lens Wearers with Dry Eye

Investigators: Chandra Mickles OD, Melissa Barnett OD, Jennifer Harthan OD

Tangible Hydra-PEG TM (Tangible Science LLC, Menlo Park, CA, USA) is a novel coating technology designed to improve lens wettability, deposit resistance and tear film breakup time, ultimately enhancing contact lens comfort. While studies have shown that Tangible Hydra-Peg technology can improve contact lens discomfort (CLD) in soft contact lens and gas permeable lens wearers, 6-7 to our knowledge, no clinical research investigation has examined the benefits of this new coating on scleral lens wear in dry eye sufferers. As such, the aim of this study is to compare the CLD and DE symptoms of dry eye scleral lens wearers between Tangible Hydra-Peg treated scleral lens wear and untreated scleral lens wear. CLD and DE signs will also be assessed to corroborate our findings.

Funded by: Tangible Science

Dry Eye Symptoms, Visual Function, and Meibomian Gland Atrophy with Digital Device Use

Investigators: Jennifer Harthan OD, Milton Hom OD, Justin Kwan OD, Scott Schachter OD, Leslie O'Dell OD, Katherine Mastrota OD, Scott Hauswirth OD, Clare Halleran OD, Scott Schwartz OD

Dry Eye Syndrome (DES) is commonly encountered among eye care professionals. DES is a disease of the tears and ocular surface that is multi-factorial; resulting in a wide range of symptoms and signs with potentially damaging effects. As technology continues to evolve and as digital devices become more available in social and work environments, patients are increasingly complaining of ocular discomfort and fluctuations in their vision. In order to diagnose dry eye and MGD, a detailed case history of the patients' symptoms along with imaging to investigate the amount of disease present in their eyes is needed. The SPEED and OSDI questionnaires and meibography will allow for a subjective and objective investigation of dry eye disease in patients who use digital devices (smart phones, tablets, computers).

Effectiveness of Orthokeratology in Myopia Control

Investigators: Jennifer Harthan OD, Yi Pang OD, Ph.D, Valerie Kattouf

The high prevalence of myopia – especially in Asian countries – is well documented, as are the sight-threatening complications of high or degenerative myopia. Specialty rigid lenses have long been shown to lessen this progression in the pediatric population; orthokeratology (ortho-k) lenses are worn at night and change the corneal topography to correct low to moderate amounts of myopia. Most of the studies on orthokeratology were conducted on Asian children. Our project seeks to investigate the efficacy of ortho-k in slowing axial elongation and myopic progression in African American (AA) children compared to that in other races.

Funded by: Wesley Foundation Scholarship

Reducing Adenoviral Patient Infected Days (RAPID)

Investigators: Mae Gordon (PI), Leonard Haertter, Julie Huecker, Mary Migneco OD, Andy Hartwick OD, Ellen Shorter OD, Izzy Goldberg, Spencer Johnson OD, Tammy Than OD, Tom Freddo OD; ICO: Jennifer Harthan OD (PI), Christina Morettin OD The primary aim of this pilot study is to generate data needed to design a definitive trial to compare the safety and efficacy of standard care with artificial tears vs. Betadine 5% (5% povidone-iodine) for the treatment of pink eye due to adenovirus. There is currently no FDA approved treatment for pink eye, a common and highly contagious eye infection caused by adenovirus. Standard care as recommended by the American Academy of Ophthalmology and American Optometric Association is instillation of artificial tears to relieve symptoms and possibly reduce the virus population. Betadine 5% is a commercially available, broad-spectrum antiseptic ophthalmic solution used for over 50 years to prepare the patient's eye and surrounding area for eye surgery. Because Betadine 5% kills

bacteria and viruses, it may be useful in treating adenoviral conjunctivitis. Betadine 5% is inexpensive, safe, widely available, and immune to the development of bacterial/viral resistance. Betadine 5% has the potential to significantly impact the clinical management of "pink eye" worldwide.

Funded by: NIH R-34 RAPID Pilot Study

Sjogren's Syndrome Outreach Chart Review Study (QUEST)

Investigators: Jennifer Harthan OD (PI, US), Melissa Barnett Erickson, OD, Barbara Caffery OD, Charles Edmonds OD, Bart Pemberton OD, Sruthi Srinivasan OD (PI, Canada), Larissa Johnson Tong

This study will provide a retrospective review of Sjögren's Syndrome (SS) patients as they sought clinical care at up to seven different clinical sites. The review will analyze dry eye signs and symptoms and related clinical data to determine the various ways in which SS is diagnosed in a variety of clinical settings and to describe the course of dry eye disease in SS. All charts with a positive diagnosis of primary or secondary SS will be included in this study. Data from up to 500 patient years of SS patients from five to seven different clinical sites will be reviewed from the year 2000 onward. All relevant data will be collected as long the patients have been seen for at least 2 visits within 10-15 consecutive months. The first visit will be the one that is considered as the diagnostic visit or the one closest following the date of diagnosis. The remaining visits will be those from 10-15 months from the initial diagnostic visit.

Scleral Lenses in Current Ophthalmic Practice: an Evaluation (SCOPE)

Investigators: Principal Investigator: Muriel Schornack, OD, Consultant: Joe Barr OD, Co-Investigator for communication: Jennifer Harthan, OD, Co-Investigator for study design: Cherie Nau, OD, Co-Investigator for funding: Amy Nau, OD, Co-Investigator for communication: Ellen Shorter, OD

Our initial project was to conduct a survey of domestic and international eye care providers selfidentified as fitting scleral lenses to assess current global scleral lens practice patterns.The second arm of the study is to execute a multi-center prospective study that will define patientcentered outcomes, changes in visual acuity and impact of scleral lens wear on anterior segment structures. Primary purpose or goals: To determine if patients using scleral lenses report improved vision-related quality of life, ocular comfort, and refractive quality of life and to determine visual acuity and ocular surface outcomes for patients wearing scleral lenses.

Family study of CTRP5 mutation, long zonules, macular degeneration and glaucoma

Investigators: Daniel K. Roberts, O.D., M.S., Radha Ayyagari, Ph.D., Faye Davis, Ph.D., Jacob Wilensky, M.D. This study seeks further understanding of the relationship of a gene (CTRP5) mutation to the development of long anterior lens zonules which may serve as a surrogate marker of risk for serious eye conditions including macular degeneration and glaucoma. This study may help physicians identify early risk for serious eye disease via recognition of the LAZ phenotype.

Funded by: NIH/NEI and the Illinois College of Optometry Research Funds

Post-synaptic Mechanisms for depression and antidepressants: Studies in model systems.

Investigators: Mark M. Rasenick, PhD (P.I at UIC) and Robert J. Donati, PhD

The study continues previous work in cellular models investigating novel cellular mechanisms for antidepressant treatment. The current study will involve post-mortem human brain tissue from control and depressed subjects as well as various blood cells from patients before and after antidepressant treatment. Further studies into the cellular mechanisms of depression and antidepressant action may lead to more specific antidepressant drugs with less side effect profiles.

Funded by: NIH

The Interrelationship of Five Oculomotor Diagnostic Tests and their Associated Binocular Vision Correlates".

Investigators: Darrell Schlange, O.D., D.O.S., Dominick Maino, O.D., M.Ed., Brian Caden, O.D., M.A., Angela Rodriguez

The purpose of this study is to determine the value of several oculomotor (eye-movement) tests for accurately and appropriately recording the ability and efficiency of eye-movements necessary for reading, near vision and classroom work. This study may help pediatric optometrist determine which tests are most helpful for patients of different ages and abilities.

Funded by: ICO Research Funds and Private Research Funds.

Vision Therapy as an Additive/Alternative Treatment for Attention Deficit / Hyperactivity Disorder - Phase II

Investigator: Darrell Schlange, O.D., D.O.S.

The purpose of this study is to determine the effectiveness of Vision Therapy as an alternative and/or additive treatment for attention and hyperactivity problems. Some binocular vision problems are often associated with attention disorders. Therefore we will treat the vision problem and test the subsequent changes in attention. The Test of Variables of Attention (TOVA) will be used pre and post-therapy to evaluate attention, impulsivity, reaction time and variability. We believe this information will be helpful in providing information on alternative and additive procedures for attention problems, not using medication.

An Investigation of Eye Movement Skills and their Relationship to Birth Order

Investigators: Christine Allison, O.D., Darrell Schlange, O.D.

The purpose of this study is to investigate the relationship between birth order and eye movement skills, as well as to investigate the relationship between various types of play activities and eye movement skills. We would expect that children without siblings, and/or oldest children may have better eye movement skills due to the types of play activities that they perform, and the increased time that they may spend reading with their parents versus children with multiple siblings.