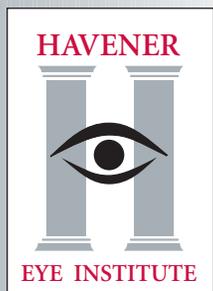


OPTHALMOLOGY Outlook



Summer 2006

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Research Symposium Review

June 23, 2006

The William H. Havener Eye Institute held its 26th Annual Ophthalmology Research Symposium on Friday, June 23rd. This year's resident research award winners were: First Place: Nicholas A. Rogers, MD, "Comparison of Swelling Response in Non-Surgical and Post-Refractive Surgery Populations," Second Place: Garret Mouser, MD, "Clinical Investigation of CSF and Blood Biological Mediators of Idiopathic Intracranial Hypertension," and



Wallace L.M. Alward, MD

Third Place: Matthew P. Ohr, MD, "Hereditary Uveal Melanoma." The graduate student award winners were: First Place: David W. Holman, B.S. and Second Place: Shelley A. Glimcher, B.S. We'd like to thank Wallace L. M. Alward, MD, Professor of Ophthalmology



Research Award recipients: Nicholas A. Rogers, MD, Garret Mouser, MD and Matthew P. Ohr, MD.

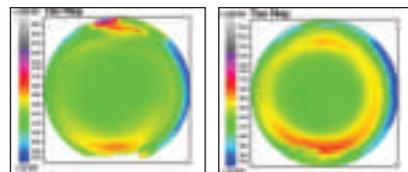
and Vice-Chairman at the University of Iowa for serving as keynote speaker. His lecture was titled "The Role of the Clinician in Molecular Genetics Studies." Also, we'd like to thank this year's judges: Charlotte M. Agnone, MD, Frederick Kapetansky, MD, Kevin G. Kegler, MD and honorary judge, Wallace L.M. Alward, MD.

Research in Corneal Biomechanics

Corneal biomechanics has become an important area of research with implications for both glaucoma and refractive surgery, including the accurate measurement of intra-ocular pressure (IOP). Jun Liu, Ph.D. and Cynthia Roberts, Ph.D. have developed a model which shows that corneal properties likely have a greater impact on error in Goldmann tonometry measurements than corneal thickness. In other words, a stiff cornea will produce an artificially high IOP because it takes greater force to indent, even if the pressure is normal. This may or may not be associated with a thick cornea. Therefore, applying a linear correction of Goldmann tonometry based on corneal thickness, could produce "corrected" values with not only the wrong magnitude, but actually "corrected" in the wrong direction. Corneal thickness remains an important risk factor for glaucoma, even though it is not recommended to use corneal thickness to "correct" measured IOP.

The corneal biomechanical response to laser refractive surgery offers an explanation for induced aberrations, particularly spherical

aberration, that have been difficult to control in both conventional and



wavefront-guided procedures. The figures illustrate the average post-operative tangential curvature maps from 30 subjects, who had each eye treated with a different laser. Both eyes of all patients had a 6.5mm optical zone, and yet the eyes on the right had significantly greater paracentral increase in curvature and significantly greater induced spherical aberration than the contralateral eyes, shown on the left. This is due the larger transition zone on left, which minimized the biomechanical response and produced a more optimal curvature profile. This research demonstrates that the transition zone is not neutral, and the design of the transition zone can affect higher order outcomes. The ability to measure corneal properties pre-operatively, offers the possibility to predict the biomechanical response, leading to biomechanical customization in the next generation of refractive surgery.

New Residents



Anupama Betkerur, MD
Medical School:
 The Ohio State University
Internship:
 Riverside Methodist Hospital



Carla Ford, MD
Medical School:
 The Ohio State University
Internship:
 Riverside Methodist Hospital



Andrew Hendershot, MD
Medical School:
 The Ohio State University
Internship: The Ohio State University Medical Center



Andrea Knellinger, MD
Medical School:
 The Ohio State University
Internship:
 Riverside Methodist Hospital



Theodore Loizos, MD
Medical School:
 The Ohio State University
Internship:
 Riverside Methodist Hospital

50th Annual Ophthalmology Postgraduate Symposium

"C3-Comprehensive Clinical Conundrums"

March 2-3, 2007 • Hilton Easton

Invited Speakers:

Gary Abrams, M.D.
 Vitreo-Retinal Disease

James Garrity, M.D.
 Oculoplastics & Neuro-Ophthalmology

David L. Guyton, M.D. - Pediatrics

Jay Katz, M.D. - Glaucoma

Grace Levy-Clarke, M.D.

Uveitis and Ocular Immunology

Francis S. Mah, M.D. - Anterior Segment

Quan Dong Nguyen, M.D.

Uveitis and Ocular Immunology

Francis Price, M.D. - Anterior Segment

Jonathan Trobe, M.D. - Neuro-Ophthalmology

Dinner Speaker: Robert L. Hamlin, DVM, PhD

"Slightly Modified, Giraffes Would Make Great Fighter Pilots and Bats, Great Cardiologists..."

Thomas Mauger, M.D., Course Director

Contact: Trish Rebish • 614-293-8117 • rebish.3@osu.edu

Awards and Recognition

Makley-Battles Award



Tim Tweitto, MD, is the recipient of the 2006 Makley-Battles Teaching Award. This award honors Dr. Torrance Makley and Dr. Morris Battles who taught countless residents for decades. This honor is given by the residents annually to a faculty member for outstanding instruction in resident education. Dr. Tweitto has just completed a retina fellowship in the department and will be moving to Seattle to join a private practice. Dr. Tweitto has been an excellent physician and teacher.

Eli G. & John B. Alcorn Prize Award in Ophthalmology



We would like to congratulate the 2006 Alcorn Award winners: Daniel B. Driscoll, Wendy M. Smith and George F. Whitehead. This award is given to 4th year medical students for excellence in ophthalmology.

Peterson Awarded AOA Fellowship

Jared Peterson, a first year medical student here at The Ohio State University, was awarded an AOA fellowship for a project that he will be working on this summer in conjunction with Cynthia Roberts, PhD and Paul Weber, MD. The project is titled, "The Influence of Age on Various Ocular

Parameters in the Normal Healthy Eye." The objective of the study is to see how age alone affects specific ocular parameters. The project involves recruiting healthy subjects from seven different age groups from the Ophthalmology and Optometry clinics at The Ohio State University.

Measurements of the same parameters will be taken in each age group and the values found will be compared across all age groups. Anyone who has had any type of eye surgery or who has been diagnosed with any ocular disorder will be excluded from the study.



Campus Campaign March 13 - April 14

Ohio State Medical Center's Campus Campaign is a month long fundraising operation that ask its faculty and staff to make a contribu-



tion to one of the thousands of programs at The Ohio State University. It is currently the most successful faculty and staff giving campaign at any university in the United States. Over the last 21 years the Campus Campaign has raised over \$100 million through internal fundraising. This year the Havener Eye Institute had 100% participation from its faculty and staff resulting in the campaigns largest number of contributors to date. The William Havener Eye Institute was awarded the most improved large cost center and 100% participation for a large cost center.

Havener Eye Institute Dublin

The Ohio State University Department of Ophthalmology is pleased to announce the opening of an additional location Havener Eye Institute-Dublin at 6435 Post Road in Dublin. Beginning in August, the faculty of the Havener Eye Institute-OSU will offer both speciality and primary eye care and treatment at the new office. This location will replace the Stoneridge ophthalmology office.



Thomas Mauger, MD, David Castellano, MD, Annette Terebuh, MD, and Steven Katz, MD will provide subspecialty services

in cornea, anterior segment, refractive surgery, glaucoma, oculoplastics, neuro-ophthalmology and orbital disease at this location as well as continuing availability

at Havener Eye Institute OSU Medical Center location on campus. Randall McLaughlin, OD will see patients for primary eye care and contact lens services.

The new Dublin office is located near the proposed site for the OSU Health and Innovation Park which will include additional medical services in the future. Since Havener Eye Institute-Dublin will be a part of the OSU Medical Center and

College of Medicine, their patients will benefit from the expertise and advances in research of one of the nation's leading medical centers.

Advances in Refractive Surgery

The Havener Eye Institute has been involved in laser vision correction since the early clinical trials in 1992. In 2001, we upgraded to the LADARVision Ô 4000 System. This system incorporates a radar eye tracker that tracks eye movement at 4,000 times per second reducing concern about eye movement during treatment. Our patients have been treated very successfully using this technology and we continue to use it today. The latest technology, wavefront, was introduced two years ago to address the quality of vision in low-light conditions. Many patients have heard about wavefront or customized treatment, but aren't really sure what advantages it offers over traditional software.

Until now, laser vision correction, like glasses and contacts, could only correct the visual distortions caused by nearsightedness, farsightedness and astigmatism. These three common types of vision distortions, called "lower order aberrations", are only responsible for 85%-90% of the overall quality of your vision. There are other imperfections in the eye's optical

system that may affect the clarity of vision as well as night vision. These visual distortions are called "higher order aberrations" and they can cause glare, shadows, halos, and other annoying visual effects.

Now, with the assistance of advanced wavefront technology, both lower and higher order aberrations, can be measured and addressed. This is accomplished by passing flat waves of light through the eye using a computerized wavefront-measuring instrument called LADARWave Ô. As the light waves travel through the eye's optical system, the distortions in the eye are measured. LADARWave Ô captures the distorted waves as they exit the eye and compares them to the perfectly flat waves that would have been reflected if the optical system were perfect. Next, a 3D map is generated representing unique visual distortions, including both lower and higher order aberrations. This map is a guide for the laser, telling it how and where to reshape the cornea to correct vision for each unique eye.

CUSTOMCORNEA Ô is the process of reshaping the cornea to address both the



David Castellano, MD

lower and higher order aberrations. On the day of treatment, the LADARWave Ô wavefront map containing the aberrations of the eye is perfectly registered and aligned with the surface of the cornea. The LADARVision Ô System maintains this precise registration and alignment of the eye while reshaping the cornea in the exact pattern defined by the personalized LADARWave Ô wavefront map.

Our state-of-the-art technology for correcting nearsightedness, farsightedness, and astigmatism is available at our new Havener Eye Institute Dublin location.

Resident & Fellow Graduation Dinner

The Havener Eye Institute held the annual graduation dinner at the Faculty Club on Friday June 23, 2006. All graduates' families were in attendance. Dr. Chambers served as master of ceremonies and gave a humorous presentation for each graduate filled with family photos.

We are proud of all of our graduates two of whom have accepted fellowships at the Havener Eye Institute.



Resident Roundtable *Case Presentation*

A 32 year-old African American woman presented to the Orbit Clinic complaining of progressive right eye bulging of approximately 3 months duration and new-onset diplopia. She denied any other visual changes or pain and her previous medical history was unremarkable.

Her uncorrected visual acuity was 20/20 OU and the remaining ophthalmic exam was completely within normal limits with the exception of 5mm of axial proptosis OD with 2mm of downward and medial displacement and generalized restriction of movement OD.

Her initial evaluation included CT scan on the orbits with and without contrast, CBC with differential, Chem 7, thyroid studies. All labs were within normal limits. The CT scan showed a large mass located within the right lacrimal gland fossa with bony erosion of the orbital roof.



The differential diagnosis for this patient with a progressive unilateral mass in the lacrimal gland fossa with bony erosion includes epithelial malignancies of the lacrimal gland, such as adenoid cystic carcinoma and mucoepidermoid carcinoma, hematic bone cysts, dermoid cysts, histiocytosis X, and Wegener's granulomatosis.

An incisional orbital biopsy was performed for a tissue diagnosis. Intraoperatively, the lacrimal gland appeared normal with no changes in color or consistency. Posterior to the lacrimal gland was a diffuse grayish and rubbery mass, which appeared to infiltrate surrounding orbital tissues.

The incisional biopsy showed a spindle cell

neoplasm composed of plump spindle cells with a moderate degree of nuclear atypia and scattered mitotic figures. Irregular, slit-like vascular spaces were seen in the background. Ki-67 antigen, a marker for mitotic activity, demonstrated an elevated proliferation index of 10%.

The final pathologic diagnosis was a spindle cell carcinoma consistent with a member of the solitary fibrous tumor/hemangiopericytoma tumor family. Immunostains for CD99 and BCC-2 proteins are positive and that for CD34 was negative. A reticulin stain demonstrated a rich reticular network investing individual cells.

At this time, she underwent additional MRI testing, which showed diffuse involvement of the supero-temporal orbit extending to the apex and approximating the optic nerve. The superior and lateral rectus muscles were also invested by tumor.

The solitary fibrous tumor/hemangiopericytoma tumor family represents a spectrum of fibrous tumors, which tend to behave in a locally aggressive manner. Even those tumors with a benign cytologic appearance present a significant risk of tumor recurrence and even metastasis. Those tumors that do recur usually are more malignant with a higher risk of distant metastasis up to 50% of the time.

Considering the overall size and location of the tumor, the inability to salvage a functional globe, extension of the tumor into the orbital apex and the risk of recurrence with malignant transformation, an orbital exenteration was advised.

She underwent a right orbital exenteration without difficulty and received adjuvant post-operative external beam radiation therapy to the right orbit. Other than a mild skin reaction following radiation therapy, she tolerated the treatment well and remains tumor free at 7 months.

Graduating Residents



Ryan Deasy, MD

is beginning a Retina fellowship at the Havener Eye Institute.



Christopher Kelly, MD

is joining the Maumee Eye Clinic in Toledo, Ohio.



Amy Kopp, MD

is beginning a Glaucoma fellowship under the direction of Paul Weber, MD.



Nicholas Rogers, MD

is joining the Northwest Eye Surgeons in Columbus, Ohio.

Graduating Fellows

Craig Moskowitz, MD

Anterior Segment

Tim Tweito, MD

Retina

Message from the Chair *Gratitude . . .*

During the recent graduation dinner for the residents and fellows, I reflected with gratitude on the contributions of the many individuals involved in their education.



I am thankful for the generous support of our donors who provide the foundation for the mission of preserving sight and restoring vision. Their gifts, large and small, are used to support the essential investment in new technology, equipment and books for training residents in the clinical and surgical skills they will need as they graduate to independent clinical careers. A recent example of a new endeavor in this area is the Department of

Ophthalmology's first annual BuckEYE Golf Classic which benefited resident education and research.

I am thankful for all the people whose commitment contributed to the achievement of the graduates and the educational programs. The staff of our department whose behind-the-scenes work supports physicians and researchers as they teach. The faculty whose gift of countless hours with the trainees

both through their involvement directly in the clinic and operating room as well as preparing and giving lectures results in excellence in the educational process. The scientists and physicians who give their time and expertise to participate with the residents and fellows in basic and clinical research. The administration of OSU College of Medicine, Doctor Hagop Mekhjian and Dr. Fred Sanfilippo who have recently provided specific support for a virtual reality cataract surgery training system as well as ongoing general support for departmental activities. The families of the residents – parents, grandparents, spouses and siblings who have provided support in innumerable ways for many years for our graduates and deserve a resounding “thank you”.

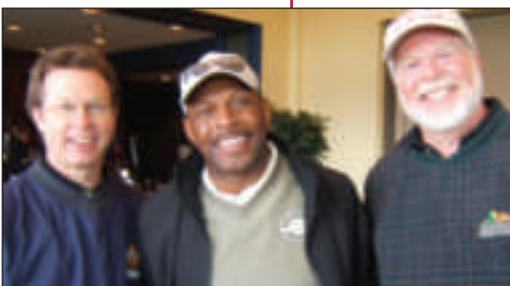
To continue the tradition of educational excellence advanced by Dr. William Havener, the importance of philanthropic support for the residency and fellowship programs must be emphasized. The gifts the Havener Eye Institute receives from our alumni and faculty are a testimony to their willingness to “pay forward” for the next generation of ophthalmologists and a vote of confidence in the mission of OSU Department of Ophthalmology.

BuckEYE Golf Classic

Golf Course of Dublin - May 22, 2006

The Havener Eye Institute hosted the 1st Annual Golf Classic on May 22, 2006. Buckeye football great Archie Griffin,

Director of Alumni Affairs at The Ohio State University, was on hand and grouped with our host sponsor Abercrombie & Fitch and their foursome scored an even 72. There wasn't a cloud in the sky as the 86 golfers teed off at the Golf Club of Dublin. The outing was won with a 14 under par, 58, shot by Doug Baker, Jack Dingle, Jerry Shell, and Tom Dingle. The second place winners were Kevin Beran, Brian Joyce, Robin Beran, and Todd Dowling. The third place winners were Randy McLaughlin, Tim McNemar, Ryan Sapp, and Brian Bower. Unfortunately, no one scored



a hole-in-one to win the beautiful Cadillac donated by Crestview Cadillac. We would also like to thank our generous hole sponsors; Haag-Streit, Principal Financial, Immke Honda, Parallel Technologies, Milltech, OSU Medical Center, Thomas and Marker Construction, Morgan Stanley, Bausch & Lomb, Heine, Optics Inc., First Place Bank, Artina, HER Realty-Kurt McCurdy and our classic sponsor Abercrombie & Fitch.

This event raised almost \$30,000 allowing us to donate almost \$20,000 to resident education and research projects. We would like to thank all of our sponsors for their generosity and support.

BuckEYE Fall Forum

September 30, 2006

Join the Havener Eye Institute on September 30th in the Presidential Suite at the Ohio Stadium. Watch, on television, the away football game between The Ohio State Buckeyes and The University of Iowa Hawkeyes. This exciting event begins at 5:00 pm and the game will follow at 8:00 pm. CME credit is pending. A buffet dinner will be served following the presentations and throughout the game. A cash bar will be available. All are invited to attend for a \$10 per person fee. West stadium parking will be provided adjacent to the Huntington Club entrance. This evening event is



sponsored by ALCON LABORATORIES and is family friendly. If you have any questions contact 614-293-9161 or e-mail eye@osu.edu.

Alumni Reunion Weekend

September 1-2, 2006

It's time to gear up for the 2006 Ohio State University College of Medicine Alumni Reunion. This event begins Friday afternoon with an Ophthalmology CME offering from 2:00-4:30. The guest speakers are George Bartley, MD, CEO of Mayo Clinic Jacksonville and Oculoplastic Surgeon; and David Castellano, MD, Refractive Surgeon. Saturday morning includes a tailgate lunch and an anticipated OSU football victory over Northern Illinois. For further information or to register for this event please visit <http://www.medicine.osu.edu/alumni/> or contact Trish Rebish at 614-293-8117 or rebish.3@osu.edu

Las Vegas AAO Alumni Reception

November 11, 2006

The Ohio State University Havener Eye Institute Alumni Reception will be held at the remarkable Caesars Palace, located at 3570 Las Vegas Boulevard, from 5:30-7:30 p.m. in the Pompeian Ballroom. All alumni, friends,

and staff members of the department are invited to attend. Reunite with past colleagues and friends while enjoying hors d'oeuvres and all that Las Vegas has to offer. A cash bar will be available. Please e-mail any questions to eye@osu.edu.



"C3-Comprehensive Clinical Conundrums" March 2-3, 2007

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