
# YALE EYE

For Friends, Patients and Alumni of Yale Eye Center

WINTER 2008
Vol. 1, No. 2


INSIDE THIS ISSUE





## Meet Michael Crair, Ph.D., *Director of the Vision Core Program*

*Dr. Marvin Sears and Dr. Michael Crair.*

In 1971, the newly established National Eye Institute requested applications for a Vision Center Grant that would generously fund Core facilities in Departments of Ophthalmology conducting vision research. The grant was to be used to recruit new faculty in basic vision research, and to develop a Vision Core Facility that would house sophisticated molecular and cellular biology equipment, as well as sequencing technology to be used by anyone working in vision research. Dr. Marvin L. Sears, founding Chairman of the Department of Ophthalmology and Visual Science at the Yale School of Medicine, applied and became the first recipient of a Vision Center Grant in the United States. In 2007, Dr. Michael Crair, Associate Professor of Neurobiology and Ophthalmology & Visual Science, was appointed Director of the Vision Core Program at Yale University School of Medicine, and was awarded what is now called the Yale Core Grant for Vision Research by the National Eye Institute.

In 1991, Dr. Crair received his Ph.D. in Physics from the University of California, Berkeley, with a dissertation in computational modeling of the brain. He completed his postdoctoral studies in neuroscience at Kyoto University, Japan, in 1993, and at the University of California, San Francisco, in 1997. From 1998 to 2006, Dr. Crair was an Associate Professor at Baylor College of Medicine in the Department of Neuroscience, and in Developmental Biology, Translational Biology, and Molecular Medicine. He was also a Module Director in the Vision Core Program. In this interview, Michael Crair reflects on his experience in physics and neurobiology, his interest in visual science, and on his appointment as Director of the Vision Core Program at Yale.

*continued on page 6*

## "Open House" Celebration at New Yale Eye Center Facility

Chairman Dr. James Tsai cuts the ribbon at the Grand Opening of Yale Eye Center's new clinical facility at 40 Temple Street on December 4. Celebrating the event are Dr. David Leffell, Deputy Dean of Clinical Affairs and Director of the Yale Medical Group; Pamela Berkheiser, Clinical Manager; Martin Donovan, Administrator; and Dr. Bruce Shields, Professor and Chairman Emeritus.

*continued on page 5*

## RETINA: *Dr. Ning Tian Charts a New Course in Discoveries of Regulatory Functions*

For the past decade, Dr. Ning Tian, Associate Professor of Ophthalmology & Visual Science and Neurobiology, and the Dolly Green RPB Special Scholar, has focused on the study of development of synaptic circuitry in the retina. He has explored the basic properties of the development of retinal ganglion cell (RGC) synaptic organization, and the reorganization in retinal synaptic circuitry under physiologic and pathologic conditions during postnatal stages. He continues to investigate the regulatory mechanisms involved in cell to cell interactions by studying the malformation and malfunction of synaptic connections in the retina.

*continued on page 2*

# Chairman's Message

Dear Friends:

On behalf of the faculty, residents, fellows, and staff in the Department of Ophthalmology and Visual Science, I am delighted to announce our recent move to new clinical space on the 3rd floor of the Temple Medical Building. The new Yale Eye Center occupies over 13,100 sq. ft. of clinical space and an additional 3,600 sq. ft. of administrative and faculty space. This state-of-the-art practice incorporates leading-edge diagnostic and therapeutic equipment - in all, 28 newly furnished exam lanes and 7 comprehensive diagnostic and treatment rooms. Once patients reach the Eye Center, they will have access to the highest level of quality care, provided by a group of highly skilled and dedicated physicians assisted by leading edge advanced technology.

In this edition, we commend Dr. Michael Crair for his successful renewal of the National Institutes of Health-funded Core Vision Grant at Yale. Dr. Michael Crair follows in the footsteps of many acclaimed scientists including Dr. Marvin Sears, Founding Chair of our Department and also the first grantee of a Core Vision Grant (see cover story). We have also highlighted the leading edge basic research being undertaken by our faculty members Dr. Ning Tian and Dr. Miguel Coca-Prados. In addition, the department's Basic Science Section recently moved into modern, open-style laboratories on the 8th floor of the 300 George Street Building. These enhancements in our clinical and research facilities will further our aspirations to become an internationally recognized center of excellence in eye care, vision research, and medical education.

Finally, we had the pleasure of honoring Tom Indoe, President of Newman's Own, and Michael Del Re, President of the Connecticut Lions Eye Research Foundation (on their 50th anniversary) at our Vision Gala at the Stamford Marriott on October 11, 2007. We also held a successful reception for our alumni physicians at the American Academy of Ophthalmology annual meeting in New Orleans. In the coming months, the department is planning to host educational and fundraising events in support of the Yale Eye Center. We look forward to communicating to you details of these activities in our Spring/Summer newsletter.

Best wishes,

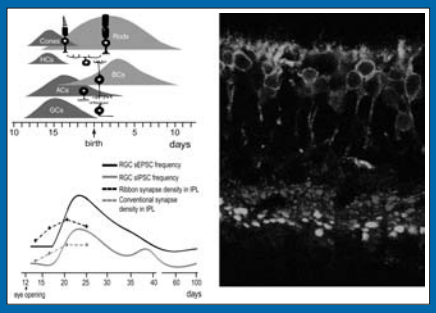
James C. Tsai

James C. Tsai, M.D.
Robert R. Young Professor and Chair

**Dr. Ning Tian,** *continued from page 1*

Dr. Tian has made significant contributions to vision research with the development of a mouse retinal slice preparation for electrophysiology; the demonstration of an activity-dependent synaptic plasticity in retinal synaptic pathways; the identification of a transgenic mouse model for the study of the development of retinal synaptic pathways; and the development of a multielectrode array system for mouse retinal ganglion cell light response recordings.

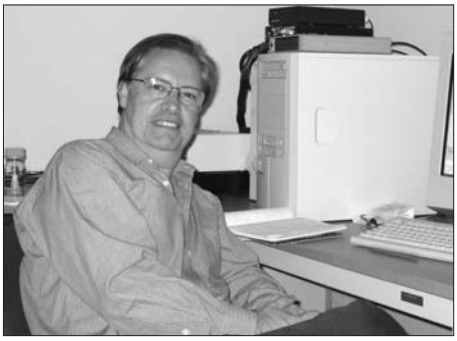
With this successful foundation established, Dr. Tian looks forward to expanding his research to other retinal diseases such as glaucoma, macular degeneration, and retinitis pigmentosa. He wants to investigate how these diseases disturb the structure and function of the retina, and how the retinal network is reorganized following the disease process. Glaucoma is a disease that results in the death of retinal ganglion cells. "Since present treatments for this condition are focused on slowing down the disease," states Dr. Tian, "and no reversals of the disease process are known yet, the ultimate goals would then be to either prevent damage to retinal ganglion cells in the first place, or to insert more viable cells after the damage is done."




Dr. Tian's research is focused on early detection of cellular changes in these diseases and how transplanted neurons could integrate into the existing pathological retina and function normally. "For example, in retinal detachments," says Dr. Tian, "once the retina is detached from the retinal pigment epithelium, the retinal synaptic connections change within three days and circuit reorganization occurs. The patient does not regain normal vision immediately because the synaptic circuits are different. It is virtually true for almost all retinal diseases, including Age-related Macular Degeneration and Retinitis Pigmentosa, that the remaining retinal synaptic circuits undergo profound continuous remodeling during the disease process. Therefore, to design successful treatments for retinal diseases in the future, we would not only need to replace the damaged retinal cells, but also, to understand how the circuits are changed between the retinal neurons and the brain, and how those changes can be fixed."

Dr. Tian is also aiming to understand new regulatory pathways in neuronal circuitry of the visual system by focusing on the immune system and its role in neuronal development in the retina. "We have discovered that the immune system regulates connective and synaptic tissue in the retina," he says, "and based upon the last decade of my research, I look forward to focusing on the roles that the immune system plays." This ground-breaking research will open up new understanding into how immune response or deficiency, under a wide variety of disease conditions, affects neuronal structure and function in the retina. Dr. Tian's new course in vision research aims to chart novel discoveries in regulatory functions in the retina. Dr. Tian's research is supported by Research to Prevent Blindness, Inc., and the National Institutes of Health / National Eye Institute.

# Celebrating the Discovery of MYOC: A Gene for Primary Open Angle Glaucoma with Miguel Coca-Prados, Ph.D.



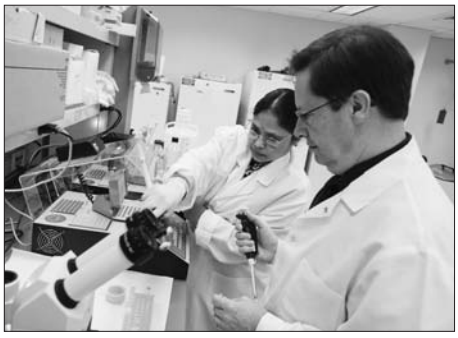
This year marks the 11th anniversary of the discovery of MYOC, the first gene identified for primary open angle glaucoma (POAG). The MYOC gene is the most commonly known genetic cause of glaucoma and blindness in adults 40 years and older. The disease is characterized by elevation of intraocular pressure, degeneration of the optic nerve head, and by the progressive loss of visual field.

In 1993, before the MYOC gene was discovered, the late Jon Polansky of the University of San Francisco identified the protein myocilin, encoded by the gene MYOC, as a secreted glycoprotein. When myocilin is mutated in glaucoma, it accumulates in the cell and eventually leads to cell death and loss of vision by a mechanism not yet known. In the same year, Dr. Miguel Coca-Prados, Professor of Ophthalmology and Visual Science at Yale School of Medicine, was studying the profiling of gene expression in normal and in glaucoma ocular tissues in eyes donated through the National Disease Research Interchange. Dr. Coca-Prados' laboratory constructed cDNA libraries from eye tissues of a single donor and isolated four expressed sequence tags (ESTs)—sections of cDNA/RNA—that would ultimately be linked to the MYOC gene. In 1997, the research teams of Sheffield and Stone from the University of Iowa identified the MYOC gene, after studying families in the United States carrying the disease.

Dr. Miguel Coca-Prados, Dr. Julio Escribano, a former Postdoctoral Associate at Yale and Associate Professor at the Universidad de Castilla, Spain, and Dr. Sikha Ghosh, Associate Research Scientist at Yale, have continued to study the structure and function of myocilin. They have discovered that the mutation of the MYOC gene prevents the secretion of the protein myocilin, and results in the phenotype of POAG. Dr. Coca-Prados and Dr. Escribano have recently identified an enzyme called Calpain II, which recognizes the proteolytic cleavage site in myocilin. Calpain II may be useful as a potential target for drug design and gene therapy.

Even though over 50 different mutations have been identified in the MYOC gene associated with POAG, only a relatively small number (3 to 5%) of patients with POAG have the mutation. This suggests that other factors, in addition to a positive family history and elevated intraocular pressure, are contributing to the progression of the disease. "Knowing that a patient has the mutation for MYOC," states Dr. Coca-Prados, "and understanding that the patient may be predisposed to the disease, enables clinician-scientists to design enhanced therapies and successful treatments.

Since the MYOC gene was discovered in 1997, eight more genes (CYP1B1, FOXC1, LMX1B, LOXL1, OPTN, PAX6, PITX2, and WDR36) have been identified. Disease-causing mutations in these genes have been associated with other forms of glaucoma including congenital, pigmentary dispersion, normal tension glaucomas, and also developmental syndromes. Dr. Miguel Coca-Prados' research has been supported by Research to Prevent Blindness, the National Institutes of Health/ National Eye Institute, Alcon, and Pfizer.



## Research to Prevent Blindness

Research to Prevent Blindness (RPB) has awarded a four-year challenge grant of $220,000 to the Department of Ophthalmology at Yale University School of Medicine to spur the development of advanced research into the causes, treatment, and prevention of blinding diseases. The research will be directed by James C. Tsai, M.D. Chairman of the Department of Ophthalmology. RPB is the world's leading voluntary organization supporting eye research.

James C. Tsai M.D., the Robert R. Young Professor and Chairman of the Department of Ophthalmology and Visual Science, has focused the energies of the basic scientists and clinicians towards forming collaborations that will result in promising translational research. His own research has involved exploring the potential benefits of neuroprotective and neuroregenerative treatments for glaucoma. Tsai notes, "We are extremely grateful to RPB for their generous support of the vision research program at Yale. Our goal is to accelerate the rate of scientific discoveries and translate these results into meaningful treatments for our patients in need." Since it was founded in 1960, RPB has channeled hundreds of millions of dollars to medical institutions throughout the United States for research into all blinding eye diseases. For information on RPB, RPB-funded research, eye disorders and the RPB Grants Program, go to www.rpbusa.org.

# Successful Vision Gala Raises Important Research Funding

*Dr. Tsai describes the challenges of continued support of vision research at Yale.*

*Cecelia Teitell, Gala Co-chair, with husband, Ernie.*

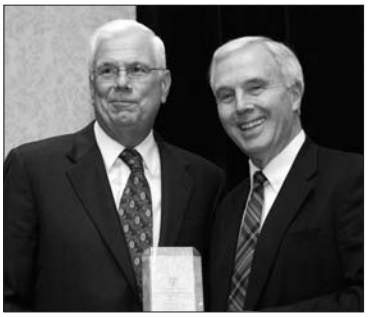
*Michael J. Del Re (center), President of the CT Lions Eye Research Foundation, accepted the Vision Award on behalf of CLERF with his family in attendance ([l-r] his parents, Michael J. Del Re, Sr. and Mary Del Re, and Mike's wife Donna, with her mother, Helen Turziano).*

*Gala attendee Katherine Prokop and Sharon McManus, Development Officer at Yale University.*

*Dr. Tsai with Darien Lions and Umbrella Club members: Mike Lombardo, Bob Giangoia, Rocky Cingari, Christopher Gautrau, Steve Ruffino, Lieutenant Governor of Connecticut Michael Fedele, and Richard Dupuis.*

*Mr. Del Re presents "Knight of the Blind" award to Mr. Indoe. President of Newman's Own.*

*CEO Mary Prudden presents Fight for Sight's Visionary Award, recognizing the Yale Eye Center's rich history of vision research.*



*Mr. Tom Indoe receives the Yale Vision Award from Gala Co-chair Dr. Shields.*

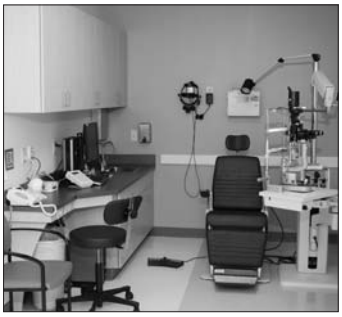
*Actor and M.C., Jim Naughton, charmed the attendees from the podium.*

*CT Lions (standing) Joseph Poirier, Council Chairman, IPDG, Julianne Shilosky, District Governor 23C, and Rose Marie Spatafore, District Governor 23A; (seated) Stephen Polezonis, District Governor 23B, and James Bennett, PD.*

*Susan and David Kalman (Advisory Board members), Dr. Tsai, and Jean and Dick Denholtz, Gala attendees.*

# Grand Opening of Yale Eye Center at 40 Temple Street / Open House

*Dr. Peter Herbert, Chief of Staff at Yale-New Haven Hospital, enjoys the company.*

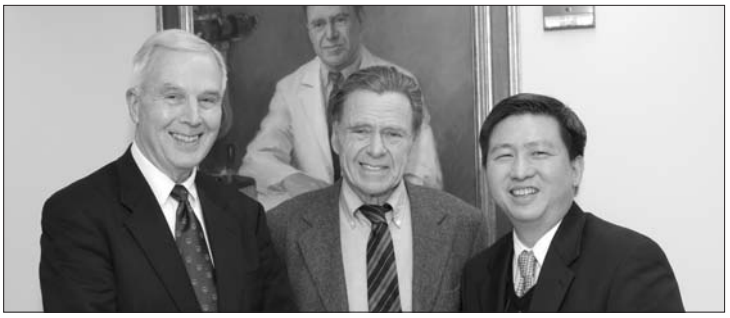


*One of 28 new examining lanes.*

*Dr. David Leffell tours with Mr. Kevin Myatt, Sr. V.P, Yale-New Haven Hospital, Dr. Tsai and Ms. Marna Borgstrom, President and CEO of Yale-New Haven Hospital.*

*Senior resident Dr. Gelareh Abedi.*

*Ophthalmic technician, Judy Basile, demonstrates retinal photography equipment.*



*The three Chairs of Ophthalmology and Visual Science: Dr. Marvin Sears (Founding Chair), flanked by Dr. Bruce Shields and Dr. James Tsai.*

*Dr. Tsai with his wife Tracey and their daughters Emily-Anne and Jessica.*

*Julann Boccio, Translational Vision Research Coordinator.*

*Ophthalmic technician, Vicky Donaldson, demonstrates online program to staff member Judy Carney..*

*Ms. Borgstrom, Mr. Myatt (background), Mr. Donovan, and Dr. Herbert.*

*Dr. Tsai, Dr. Shields, and Mr. Richard Galiette, Development Officer, with CT Lions Eye Research Foundation officers Diane Bielski, First V.P; Michael J. Del Re, President; and Rocky Cingari, Past President.*

*Dr. Hylton Mayer, one of five newly recruited clinicians at Yale Eye Center.*

## Meet Michael Crair, Ph.D., *continued from page 1*

***What originally attracted you to neurobiology and especially to the visual sciences?***

I had an excellent high school physics teacher who motivated me to learn basic physical principles—for instance, how electrical circuits work. Later, when I became interested in the brain as an electrical organ, my physics background helped me to apply the same principles to neurobiology, and eventually to biophysics. Because the visual system is so beautifully ordered and has been very well studied, it provided me with a splendid model for understanding synapse and neural circuit formation in the brain.

***Why are synapses and neural circuits in the brain so important to the visual system?***

The visual system is the best understood neural 'circuit' or network in the brain. We know a lot about how it works and how it doesn't work, and that has helped us a great deal to understand how the brain functions. In 1981, David Hubel and Torsten Wiesel won the Nobel Prize in Physiology & Medicine for their discoveries concerning information processing in the visual system. They demonstrated that early in development, what you see has a profound impact on how neural circuits that process visual information get wired. So, if you have abnormal patterns of visual experience early in development, you end up forming miswired neural circuits, and these lead to profound visual deficits. The reason why visual experience is so important is that there is a normal pattern of neuronal activity generated, in part, by visual experience. Neuronal activity actually shapes the pattern of synapses – the point at which two neurons communicate – formed during development.

***How does the study of synapses and neural circuits apply to ophthalmology today?***

Well, for example, because of these discoveries, if a baby is born today with a congenital cataract or tumor of the eye, pediatric ophthalmologists know to surgically repair the physical structure of the baby's eye as soon as possible to make sure it is relaying normal visual information to the brain. This assures them that the infant's normal synapses and circuits continue to form and avoids developing conditions such as amblyopia and vision Loss. I look forward to collaborating with clinician-scientists like Dr. Daniel Salchow, Assistant Professor of Ophthalmology and a pediatric ophthalmologist at the Yale Eye Center, to develop the best treatment paradigms for pediatric visual disorders.

***What types of studies are you doing that relate to pediatric conditions?***

We mimic pediatric conditions such as amblyopia, and other visual deficits in mouse models, and look for the effects on synaptic and neural circuit formation. We are interested in how synapses form in retinal ganglion cells (RGC) – cells which carry electrical signals from the retina through extensions called axons – and how they reach their targets deeper in the brain.

***What about disorders such as glaucoma and age-related macular degeneration?***

In glaucoma, because of an increase in intraocular pressure and genetic mutations, there is a loss of RGCs and atrophy of the optic nerve. In our studies, we are not specifically examining the cause of glaucoma, but rather, we are concerned with how we can help patients recover from this condition. If we find some way to rescue RGCs through drugs or therapies, or by reintroducing new RGCs into the retina, we still have to figure out how to help those cells form the right patterns of connections to the deeper areas of the brain. Even if we are able to return the retina to normal function and rescue or reintroduce RGCs, without the proper pattern of connections to the brain, they are not going to do you much good. We know that some patients with macular degeneration are going to be treatable with anti-VEGF therapies, which will help maintain the health of light-sensitive retinal cells. However, in severe or advanced cases of macular degeneration or other visual disorders, it may be necessary to resort to neural prosthesis. A retinal prosthesis will bypass the photo transduction apparatus of the eye and go directly to stimulate whatever is functioning – the optic nerve or RGC's – to restore vision. Again, if the optic nerve connections into the brain are wrong or misdirected, the artificial retina will not be effective unless we can understand how to stimulate the formation of an appropriate pattern of connections from the eye to the brain.

***How will you direct the wiring of something so delicate and complex?***

We will use recognition molecules called chemoattractants and chemorepellants to guide axons to the right targets in the brain. Once the axon branching begins to occur in the right places, we will have to encourage the branches to form the right connections synapse by synapse. If the synapses are not being made, or are being made in the wrong places, branches are going to be retracted and eliminated. We want to induce and direct axon branch formation to encourage the creation of synapses that will stabilize the formation of the axon branches and form a functional neural circuit.

***What is the role of the Vision Core Facility?***

First, my approach is not to develop techniques and then apply them to systems that are amenable. Instead, I prefer to address a fundamental question, and then to develop whatever techniques are necessary to answer it. I think this is a better approach – especially when a question is complicated, and no single technique can provide an answer. The role of the Vision Core Facility is to assist anyone who is doing vision research to use a variety of techniques and make his or her research easier to do. If you don't have the expertise for a particular molecular biology technique, or you don't have the resources for a microscopic or sequencing technique, the Vision Core Facility will provide that. Our goal in the Vision Core Facility is to help each scientist see the big picture.

# The Ocular Imaging Revolution at the Yale Eye Center

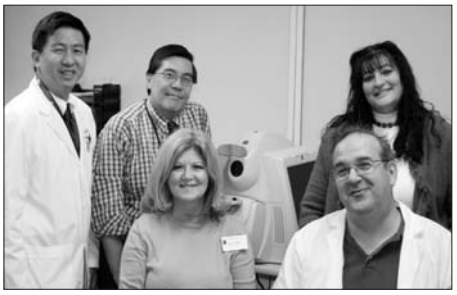
*by Kenneth E. Fong, Clinical Supervisor*

Fresh out of the City College of New York in 1976, and into my first job as the Ophthalmic Photographer for the Department of Ophthalmology, Cornell Medical College – New York Hospital, Kodachrome color slide and TRI-X negative film were all we used and Eastman Kodak was the king. Typewriters prevailed and IBM would not introduce the first "Personal Computer" (PC) until the 1980's. Those were the days when we spent hours in the darkroom, mixing chemicals, processing film, and wet readings in hallways.

When I came to Yale in January, 1989, imaging remained unchanged. In 1999, we made the decision to convert from film, to digital fluorescein angiography and test results were available immediately! Images could be manipulated, rotated, reversed, lightened and darkened, magnified, measured, enhanced and reviewed, in ways that we never dreamed of using conventional film.

In 2005, we determined that the resolution of our digital color images was high enough to make the switch from color slide film to a relatively low-end color digital fundus photography system. Thanks to the efforts of Dave Bilodeau, a staff photographer and computer support person, we installed our own "Intranet" that allowed our physicians to review images in their offices and while in the laser treatment room.

Flashing forward to 2007, our current digital fundus photography system captures razor sharp images using a 12mp camera – a significant increase in resolution from our first digital camera. With Dr. Tsai's arrival in 2006, and with plans to relocate the clinical practice to the Temple Medical Center building , we made the decision with a quantum leap forward to move all of our digital imaging to a web-based server (which now lives in my office), and to a software application called Eye Route which manages these images. This program has a professional data backup and archival system which allows us to integrate digital images from all of our diagnostic technologies into one simple interface that is sorted by patient name. Our Topcon ImageNET IVF, ICG, auto fluorescence, retinal, disc and slit lamp photography, Stratus OCT and Visante, HRT3, and HVF testing images, are all now available for review by our physicians from any networked computer. This flexibility allows our physicians to examine a patient and review their diagnostic test results while still with them in the examination rooms. We no longer need to move faculty or patients to a "review" station to look at these images. Our physicians can also review test results while traveling – an invaluable tool that allows them to continue to follow their patients, even while away from the Eye Center.



*Dr. Tsai and Pam Berkheiser flank the photography team (Kenneth Fong, Pam Ossorio, and Roberg Yerrington) with the UBM, new Visante Anterior Segment OCT (Optical Coherence Tomography) and HRT3 (Heidelberg Retina Tomograph 3).*

In 2008, Robert, Pam O, and I look forward to using our imaging skills to acquire the best diagnostic images and provide the highest level of quality patient care.

*(Editor's Note: Ken is greatly appreciated by the Yale Eye Center as the "maven" for technological advances in our department.)*

# Martin Donovan...

Martin Donovan, Administrator for the Department of Ophthalmology and Visual Science, oversees the overall operation and finances for the Department. Mr. Donovan has been a member of the Yale community for nearly 30 years, serving in a variety of financial positions with Yale-New Haven Hospital for 20 years, and subsequently, with the Yale School of Medicine. In addition to his duties as Director of the Yale Medical Group, Mr. Donovan served for eight months as the Interim Administrator for the Department of Ophthalmology and Visual Science, until then newly-appointed Chairman, Dr. James C. Tsai, selected him to be the Department's new Administrator. One year to the date of Mr. Donovan's appointment, the Department moved to new clinical and research facilities at 40 Temple Street and 300 George Street in New Haven, Connecticut.

Martin Donovan's primary goal is to work with the talented members in the Department and help increase its overall efficiency and the quality of patient care. Thanks to the addition of 5 new faculty members and the generous investment by the Dean's Office, he and Dr. Tsai hope to build an internationally recognized center of excellence providing state-of-the-art ophthalmic care. By decreasing patient wait times, he believes that more patients can be examined and given the highest level of quality care. Mr. Donovan hopes that his administrative abilities will help to nurture a more efficient and dynamic Departmental practice. He and his wife have three daughters, and they are the proud grandparents of five grandchildren.

# Continuing Medical Education

**February 15**
*Steve Feldon, M.D.*
Chairman, University of Rochester Department of Ophthalmology, Director, University of Rochester Eye Institute

*"The Changing Face of Thyroid Eye Disease"*

**February 22**
*Robert Bernardino, M.D.: M&B Conference*
*Philip Silverstone, M.D.*
Attending Ophthalmologist, Yale New Haven Hospital

*"Clinical Challenges in Ophthalmic Plastic and Orbital Surgery"*

**February 29**
*Jeffrey Schultz, M.D.*
Associate Professor, Albert Einstein College of Medicine / Montefiore Medical Center

*"Pigmentary Glaucoma – A Curable Disease?"*

**March 7**
*Robert Bernardino, M.D. and Resident Physicians*

*"M&B Conference, Resident Case Presentations"*

**March 14**
*Steven J. Gedde, M.D.*
Professor of Ophthalmology, University of Miami / Bascom Palmer Eye Institute

*"Glaucoma Drainage Implants"*

**March 28**
*Michael Raizman, M.D.*
Associate Professor of Ophthalmology, Tufts University School of Medicine

*"Uveitis and Cataract Surgery"*

**April 4**
*Robert Bernardino, M.D.: M&B Conference*
*Armand Daccache, M.D.*, Assistant Clinical Professor of Ophthalmology and Visual Science, Yale School of Medicine

*"Clinical Challenges in Retina"*

**April 11**
*Ralph Eagle, M.D.*
Professor of Ophthalmology and Pathology, Jefferson Medical College / Wills Eye Hospital

*"Ocular Pathology"*

**April 18**
*Stephen J. Ryan, M.D.*
President, Doheny Eye Institute; Professor and Grace and Emery Beardsley Chair in Ophthalmology, University of Southern California

*"Imaging: A Quantitative Approach to Diagnosis and Management"*

**April 25**
*Robert Bernardino, M.D. and Resident Physicians*

*"M&B Conference, Resident Case Presentations"*

**May 9**
*Eric Donnenfeld, M.D., F.A.A.O., F.A.C.S.*
National Medical Director, TLC Laser Centers

*"Refractive Surgery"*

**May 14**
*Iqbal Ahmed, M.D.*
Assistant Professor, University of Toronto

*"Surgical Technique"*

**May 16**
*Andrew Packer, M.D.*
AAO Councilor, Connecticut Society of Eye Physicians

*"Advocacy: Why Ophthalmologists Need to be Involved"*

**May 23**
*Barrett Haik, M.D.*
Hamilton Professor and Chair of Ophthalmology, University of Tennessee

*"Pediatric Orbital Tumors"*

**May 30**
*Robert Weinreb, M.D.*
Distinguished Professor and Vice Chair of Ophthalmology, University of California at San Diego / Shiley Eye Center

*"Glaucoma Screening"*

**June 13**
Yale Spring Symposium/ Alumni Day
New Haven Lawn Club
Featuring *Douglas Gaasterland, M.D., Douglas Lazzaro, M.D., Shizuo Mukai, M.D., Mitch Opremcak, M.D. and Yale Alumni*

**June 20**
*Robert Bernardino, M.D.: M&B Conference*
*Yanina Kostina-O'Neil, M.D.*
Clinical Instructor of Ophthalmology and Visual Science, Yale School of Medicine

*"Clinical Challenges in Neuro-ophthalmology"*

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