

Inside Retina

Volume VII

Fall 2011

News from the California Retina Research Foundation

VISIONWALK RAISES AWARENESS AND FUNDS



Dr. Pieramici with his patient, 12-year-old Lily Wash, who participated in VisionWalk 2011 with the largest team, *Lookin' Out for Lily*.

Over 150 walkers participated in Santa Barbara's inaugural VisionWalk, held on April 30 at Santa Barbara City College. California Retina Research Foundation's *Macula On* was one of 27 teams participating in this year's 5K walk to support the Foundation Fighting Blindness raise over \$28,000 for retinal degenerative disease research. The top five fundraising teams included *Team Romo*, *IC-IV*, *Lookin' Out for Lily*, *Light-in-Sight* and *Macula On*.

VisionWalk is the national signature fundraising event of the Foundation Fighting Blindness and since its inception in the spring of 2006 the program has raised over \$16 million to fund sight-saving research. VisionWalk was brought to Santa Barbara for the first time this year, thanks to the dedication of co-chairs Jonathan Chester and Conor O'Sullivan and the honorary chairs John and Mary Romo along with the support of many volunteers. Special thanks to CRC staffers Jessica, Lisha, Nitce, Angie, Brenda, Leti and Maria for fundraising and support efforts. California Retina would also like to thank those patients who generously donated through the collection boxes in our offices.

INSIDE THIS ISSUE

Patient Perspectives	2
New Lompoc Office	3
Research Review	4
<i>An update of new and ongoing clinical trials</i>	
On the Forefront of Landmark Research	6
<i>Dr. Steinle reports on his research interests</i>	
Central Coast Meetings	7
Eye Sightings	7
CRC Annual Education Meeting	8



The California Retina Research Foundation's *Macula On* team contributed \$3000 to the Foundation Fighting Blindness.

PATIENT PERSPECTIVES



CRC's clinical trial coordinator, Lisha Wan, with clinical trial participant Harry Maynard.

Patient: Harry Maynard

Occupation: Retired Bank President, CEO Board Member of Community Memorial Hospital in Ventura California

Diagnosis: Diabetic Macular Edema

Clinical Trial Participant: Diabetic Retinopathy Clinical Research Network (DRCRnet); currently in the second of a five-year-trial

How did you become involved with the DRCRnet Trial?

I was referred to Dr. Pieramici nearly three years ago for a retina problem in my right eye and that's when I was diagnosed with macular edema, a condition Dr. Pieramici attributes to my diabetes. He said I qualified as a candidate for a national research study and I readily agreed.

What motivated you to participate?

I am glad to try to help other patients. I have served on the Community Memorial Hospital Board for the last 33 years and have an interest in health care. I am also on the cemetery board but I am trying to avoid that one!

What has your experience been like as a study patient?

I receive one treatment per month and for the first year I noticed no change in my vision. Dr. Pieramici informed me that I had been receiving the placebo and so the second year he administered monthly Lucentis injections and I noticed a considerable change after that treatment. My eyesight has significantly improved.

Are there any disadvantages of being a study patient?

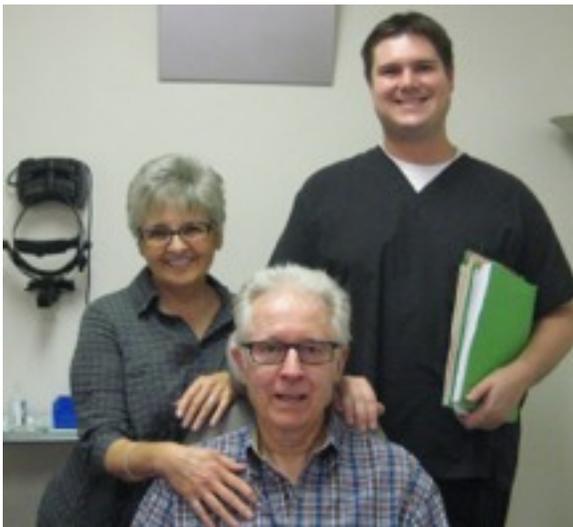
There are no disadvantages. Dr. Pieramici is so good at keeping me informed of what he is doing; he takes his time and explains everything. I am compensated for my fuel driving to and from the Oxnard office and I find the study very interesting.

What advice would you give other patients considering clinical trial participation?

I encourage it. It's painless, it helps others, while possibly helping yourself, and it's one of the few ways older people can be of service.

How has macular edema changed your life?

It really hasn't limited my lifestyle. I am 83-years-old and still driving. I credit the treatment that I've received for my visual improvement. My macular edema could have developed into something worse if I hadn't received appropriate care. I think California Retina Consultants and your newsletter are well-kept secrets. This is such a fine medical institution that offers local patients access to national clinical trials.



CRC's clinical trial coordinator, Jack Giust, with clinical trial participant Ted Little and his wife, Pat Little.

Given your unique perspective, as patient and Hospital Board advisor, what challenges do you foresee for the future of medicine?

I'm very concerned about the government involvement and mandates on doctors. Government now controls the hospital billing systems – it used to be doctors were in charge. Government involvement adds to the cost. It's not the pharmaceutical companies but the doctors and hospitals that will be governed, which I don't believe benefits the patient.

Patient: Ted Little with his wife Pat

Occupation: Adjunct Professor, Philosophy, Cerro Coso College

Diagnosis: Age-related Macular Degeneration (AMD)

Clinical Trial Participant: CATT Trial testing efficacy of Avastin versus Lucentis; currently nearing the end of his two-year trial

Hobby: Raising racing pigeons

When were you first diagnosed with AMD?

I woke up two years ago and recognized that there was something wrong in my right eye – I saw a strange image, like an elephant, and immediately went to see an ophthalmologist who referred me that same day to California Retina Consultants.

How did you become involved with the clinical trial?

On my first visit after diagnosis I was asked if I'd be interested in the CATT study.

Pat Little – We were given a lot of written material which we reviewed when we got home and we also researched the trial online and determined it was a good thing. We felt it was so serendipitous; everything just fell into place. Within one week of being diagnosed with AMD, Ted was enrolled in the trial and received his first injection. You can't ask for better service and timing.

Has your vision changed since enrolling in the trial?

I don't use this word lightly, but it has been miraculous. I was 20/50 before the trial and now my vision is 20/20. The doctor tells me I probably wouldn't be able to see without the treatment.

Are there any disadvantages of being a trial participant?

It usually takes one day for the discomfort to subside, but there are no residual effects. It's absolutely worth the monthly 50 minute drive to the Bakersfield office for treatment.

Pat Little – When I first heard about the procedure – getting injections to the back of the eye – the thought of it made my toes curl. But I can tell you with no hesitation that I would have no problems with intraocular injections if I ever needed them. Dr. Pieramici is skilled and he explains everything he is doing.

Would you recommend clinical trial participation to others?

Absolutely!

Pat Little - Altruistically it's a good feeling to know you are helping to further research in an area where it's needed. The cup is twice full – Ted's vision improves and he contributes to something very worthwhile for those who follow with AMD.

Is there anything else you'd like potential study patients to know?

Pat Little - We love the office. Everyone, including the doctors, technicians and front office staff are delightful. They take such good care of Ted and are very patient with his busybody wife! We didn't know what to expect and were very comfortable. We know this office employs some of the best-trained doctors in the country. The Center (California Retina Consultants) is a real gift to Bakersfield.

NEW OFFICE OPENS IN LOMPOC



California Retina Consultants is delighted to announce the opening of a new office in Lompoc. “We felt it was important to provide local access to our Lompoc patients who often travel a great distance to one of our other locations,” says Dr. Nasir. It also offers the Lompoc eye care professionals with another resource and increased availability for local retinal referrals. The doctors are currently accepting patients at this full service office, located at 611 Ocean Avenue in Lompoc. Please call (805) 740-3080 to schedule an appointment.

RESEARCH REVIEW

Avastin vs. Lucentis:

Which is the best treatment for Age-Related Macular Degeneration?



Top-line results from the Comparison of Age-related Macular Degeneration Treatments Trials (CATT) were recently published in the *New England Journal of Medicine*. In this prospective clinical trial, two highly effective and widely used medications for neovascular (wet) age-related macular degeneration, Avastin and Lucentis, were compared head to head.

A total of 1,208 patients from 43 clinical centers around the United States were enrolled in the study. California Retina Consultants (Dr. Robert Avery, principal investigator) is proud to be the only site in the central coast of California chosen to participate in this seminal clinical trial. Patients were randomized to receive eye injections of Avastin or Lucentis on either a fixed monthly schedule or on an as-needed basis. All patients were monitored monthly for two years.

The results of the study showed equivalent efficacy between the two medications. At one year, monthly Avastin and Lucentis showed gains of 8.0 and 8.5 letters, respectively (99.2% interval). The study also demonstrated no significant difference between the fixed monthly schedule and as-needed dosing regimen; patients receiving Avastin and Lucentis as-needed gained an average of 5.9 letters and 6.8 letters, respectively. While visual acuity outcomes were similar in the as-needed groups, patients in the Avastin group received more treatments on average than patients in the Lucentis group (7.7±3.5 for Avastin and 6.9±3.0 for Lucentis out of a maximum of 13 treatments in the first year of the study).

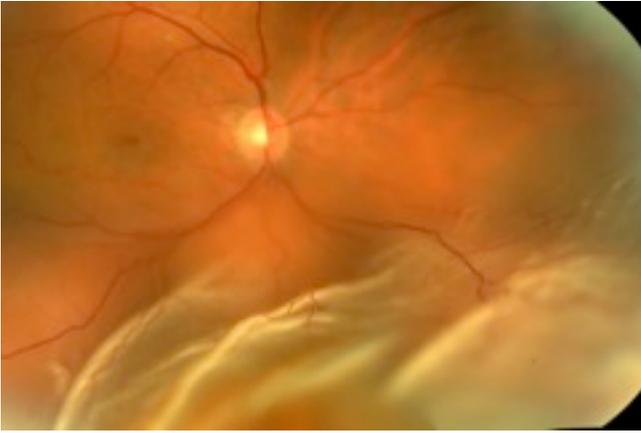
Although the CATT Trial was not powered to detect differences in safety, the data showed some similarities and differences between each drug. Rates of death, heart attack and stroke were low and similar for patients receiving either Avastin or Lucentis. However, the proportion of patients with serious adverse events (primarily hospitalizations) was slightly higher in the group receiving Avastin compared to Lucentis (24% vs 19%). Further investigation is needed to determine whether these illnesses are due to chance, linked to the medication or to co-existing medical conditions which are common in older patients. Analysis of two-year data will help answer these important questions regarding safety.

The cost differential between the two drugs is significant. A cost-per-study patient analysis performed in the CATT Trial showed that the average cost for study drug per patient in the first year was \$23,400 in the monthly Lucentis group, \$13,800 in the as-needed Lucentis group, \$595 in the monthly Avastin group, and \$385 in the as-needed Avastin group.

Dr. Robert Avery credited those who helped bring the study to fruition on the American Society of Retinal Specialists website, stating, "We congratulate Dr. Dan Martin (CATT Study Chair, Chairman, Cole Eye Institute, Cleveland Clinic) and his team who worked tirelessly to make this trial possible. This includes help from the American Society of Retina Specialists and American Academy of Ophthalmologists who were involved in the political battle to allow this trial to take place. We would also like to thank all of the patients whose participation and commitment helped answer critical clinical trial questions."

Dry AMD Treatment Trial: Factor D Phase I and MAHALO Study

A novel therapeutic approach seeks to find a treatment for dry AMD through complement system inhibition. The complement system was identified to have an important component in drusen formation and retinal pigment epithelial cell damage that leads to geographic atrophy. Genentech is studying an antibody to factor D, an important activator of the complement system in geographic atrophy. Blocking factor D in individuals with geographic atrophy may be able to slow disease progression. The initial trials conducted on individuals with geographic atrophy took place in 2010. A phase 2 trial is underway to test the efficacy and long-term safety of the drug.



Retinal Detachment Study

A rhegmatogenous retinal detachment occurs when a tear or a break in the retina allows liquefied vitreous fluid (jelly-like substance inside the eye) to enter the space below the retina and lifts or pulls the retina away from its normal position along the back of the eye. The retina becomes detached from a layer of cells called the retinal pigment epithelium that nourishes the retina. Permanent vision loss can result if retinal detachments are left untreated. Retinal detachment occurs in about one out of 10,000 people per year.

Surgical options for repair include pneumatic retinopexy (gas-bubble inside the eye), scleral buckle (small polymer belt around the eye), pars plana vitrectomy (microsurgery inside the eye), and combined pars plana vitrectomy/scleral buckle. A recent study conducted by California Retina Consultants (CRC) on all retinal detachment cases repaired by CRC physicians between 1999-2009 reviewed single-operation success rates and visual acuity outcomes. Results were presented at Macula Society, Retinal Detachment Society and American Society of Retinal Surgeon's 2011 annual conferences. This study was funded by the California Retina Research Foundation and the Santa Barbara Cottage Hospital Research Grant Program. Dr. Castellarin stated, "The results of our study were encouraging. In cases of primary retinal detachment our rates of successful, single-surgery repair approached 97.5%. These results compare favorably with previously published reports from other centers where single-surgery, primary reattachment rates ranged from 80% – 93%."

nia Retina Consultants (CRC) on all retinal detachment cases repaired by CRC physicians between 1999-2009 reviewed single-operation success rates and visual acuity outcomes. Results were presented at Macula Society, Retinal Detachment Society and American Society of Retinal Surgeon's 2011 annual conferences. This study was funded by the California Retina Research Foundation and the Santa Barbara Cottage Hospital Research Grant Program. Dr. Castellarin stated, "The results of our study were encouraging. In cases of primary retinal detachment our rates of successful, single-surgery repair approached 97.5%. These results compare favorably with previously published reports from other centers where single-surgery, primary reattachment rates ranged from 80% – 93%."

Glaucoma Study

Drainage implants are increasingly utilized in the surgical management of advanced glaucoma when the glaucoma proves unresponsive to maximal medical care. Recent design modifications have reduced the risk of hypotony (low eye pressure) after implantation. Dr. Avery and colleagues developed a novel technique that utilizes a temporary suture ligation around the implant tube to allow for control of pressure inside the eye following surgery. After the eye pressure is stabilized the suture can be removed during an office visit. A recent review of 119 cases performed by CRC physicians showed excellent eye pressure control after surgery with minimal surgical complications. Dr. Nasir presented the results of the study at the American Society of Retinal Surgeon's 2011 annual conference. This study was funded by the California Retina Research Foundation.

Genetics Studies



GALLEY Trial – Recent advances in technology have led to better understanding of the genetic component in age-related macular degeneration. At CRC, we are continuing to develop this further in our efforts to analyze the DNA of individuals with advanced AMD in one eye and early or mild AMD in the other eye. Our goal is to identify genetic markers that may confer a higher risk for developing advanced AMD in the eye with early AMD. This work is being conducted with Dr. Kang Zhang at Scripps Eye Clinic.

Steroid Induced Glaucoma Trial – Dr. Avery and colleagues are collaborating with researchers at the Bascom Palmer Eye Institute at the University of Miami and Doheny Eye Institute at the University of Southern California on a genetic study of individuals with increased eye pressure following a steroid eye injection. The goal is to create a genetic test that will allow physicians to identify patients who are at a higher risk of developing an adverse response to steroid eye injections. An individual who may experience increased pressure may be given an alternative medication to treat their underlying eye condition.

Upcoming Trials

Protocol R- Topical non-steroidal anti-inflammatory agents (NSAID) for non-central diabetic macular edema (DME). Non-steroidal topical eye drop solutions will be tested in a clinical trial to determine the efficacy of the drug in preventing the progression of non-central diabetic macular edema into center-involved diabetic macular edema. The study will be conducted by the Diabetic Retinopathy Clinical Research Network and sponsored by the National Institute of Health and National Eye Institute.

Regeneron VEGF Trap-Eye for DME – VEGF-Trap-Eye is a recombinant molecule designed to deactivate and remove VEGF molecules with high affinity. The experimental compound has proved effective in patients with wet AMD and retinal vein occlusion.

Protocol M – A study investigating the effects of diabetic education on the progression of ocular disease. Sponsored by the National Eye Institute and DRCRnet.

CALIFORNIA RETINA CONSULTANTS' DR. NATHAN C. STEINLE ON THE FOREFRONT OF LANDMARK RESEARCH



Nathan C. Steinle, M.D.

“The physicians of California Retina Consultants have a reputation of being good clinicians and distinguished world leaders in vitreoretinal research; I am very excited to surround myself with such excellent physicians and to be able to offer our patients the best in recent advancements of treatments along with access to innovative clinical trials.”

-Dr. Nathan Steinle

The latest addition to California Retina Consultants is Nathan C. Steinle, M.D. Dr. Steinle completed his vitreoretinal surgical training at the renowned Cleveland Clinic. While at the Cleveland Clinic, Dr. Steinle’s mentor was Dr. Daniel F. Martin, Chairman of the Cole Eye Institute at the Cleveland Clinic. Dr. Martin also serves as the study chair for the landmark Comparison of AMD Treatments Trials (CATT). The highly anticipated year-one CATT results were recently published in the *New England Journal of Medicine* and Dr. Steinle says he felt very fortunate to have been given an inside perspective on such a groundbreaking clinical trial. He notes, “Worldwide, every retina specialist has been eagerly awaiting the results of this trial. Aside from the far-reaching implication to the field of ophthalmology, CATT will reform comparative-effectiveness research across all areas of medicine. Thus, my time spent at the Cleveland Clinic was certainly a once-in-a-lifetime opportunity to witness the progression of such a revolutionary scientific trial.” The year-two CATT results will be released in the spring of 2012.

Dr. Steinle’s research interests include novel therapies for the treatment of age-related macular degeneration, retinal imaging modalities utilizing optical coherence tomography, and advancements in micro-incisional vitreoretinal surgery. His latest publication in the *British Journal of Ophthalmology* details the use of oral rifampin in the treatment of chronic central serous retinopathy. Dr. Steinle remarks, “As a cytochrome P450, 3A4 inducer, rifampin is thought to favorably alter the metabolism of endogenous steroids; thus, rifampin is starting to be used as a treatment option for patients with chronic central serous retinopathy. Chronic central serous retinopathy is a disease with very few treatment options, and the existing treatment options are suboptimal. Fortunately, this drug potentially marks a viable treatment option for patients with this frustrating disease. Eventually, clinical trials will elucidate the optimal dosing and treatment schedule.”

The ability to conduct widely influential research is one of the primary reasons Dr. Steinle joined California Retina Consultants. “The physicians of California Retina Consultants have a reputation of being good clinicians and distinguished world leaders in vitreoretinal research; I am very excited to surround myself with such excellent physicians and to be able to offer our patients the best in recent advancements of treatments along with access to innovative clinical trials.”

CENTRAL COAST MEETINGS EDUCATE LOCAL EYE CARE PROFESSIONALS

Lancaster and Palmdale eye care professionals received eye-opening suggestions on the management and care of many complex retinal diseases at a recent meeting hosted by California Retina Consultants. Drs. Couvillion, Castellarin and See displayed high-resolution optical coherence tomography and fluorescein angiography images of eyes with macular degeneration, diabetic retinopathy, retinal detachment, and uveitis while discussing the management and care of each complex case. Nearly 30 ophthalmologists and optometrists attended the April meeting sponsored by Allergan.



In a separate event, more than 70 ophthalmologists, optometrists and eye care technicians attended the California Retina Research Foundation's Third Annual Retina Case Conference in Bakersfield, where Drs. Pieramici and Castellarin discussed the most recent advances in the treatment of retinal diseases. The doctors discussed benefits of photodynamic therapy when administered alone and in combination with Avastin, in patients with wet macular degeneration and very low vision. Results of the Comparison of Age-Related Macular Degeneration Treatments Trials (CATT), which compared Lucentis and Avastin, were also presented. The role of Ozurdex, an injectable, slow-release steroid in the eye used to treat patients with retinal vein occlusions was also discussed and several case examples were shared with the audience. The July meeting was held at Padre Hotel in Bakersfield and was sponsored by Genentech, Allergan and QLT Pharmaceuticals.

EYE SIGHTINGS

Dr. Dante Pieramici presented research findings at The Johns Hopkins Wilmer Eye Institute Meeting, Victor, ID; ARVO, Ft. Lauderdale, FL; American Society of Retina Specialists, Boston, MA; DRCR Annual Meeting, Tampa, FL.

Dr. Ma'an Nasir attended the Hawaiian Eye Meeting, Maui, HI; the Aegean Retina Meeting, Crete, Greece; Club Vit in Los Angeles CA; and presented new research on the management of neovascular glaucoma at the American Society of Retina Specialists Annual Meeting in Boston

Dr. Avery presented scientific papers at the Hawaiian Eye Meeting, Maui, HI; ARVO, Ft. Lauderdale, FL; Aspen Retinal Detachment Society Meeting, Aspen, CO; Club Vit in Los Angeles, American Society of Retina Specialists in Boston, MA; and Macula Society, Boca Raton, FL.

Dr. Alessandro Castellarin attended the Club Vit meeting in Los Angeles, CA.

Dr. Gabriel Gordon brings a wealth of experience and education to CRC where he has been acting as an independent consultant since May. Dr. Gordon received his Ph.D. from the University of Miami Miller School of Medicine in the field of molecular cell and developmental biology. He completed his post-doctoral fellowship at USC where he continued his work examining various molecular mechanisms of corneal wound healing and maintenance. His work has appeared in *Archives of Ophthalmology*, *Investigative Ophthalmology and Visual Science (IOVS)*, and the *Journal of Cell Physiology*.

CRC welcomes Lisha Wan to the research department. A 2008 graduate of UCSB, Lisha has been exposed to ophthalmology her entire life; her father, Dr. Lee Wan, formerly served as Chief of Staff at St. John's Hospital in Oxnard and currently practices ophthalmology in Oxnard. Lisha will coordinate clinical trials for the Oxnard and Santa Barbara offices.

REGISTRATION OPEN FOR ANNUAL EDUCATIONAL MEETING

Keynote Speakers:

Dr. Mark Humayun and Dr. Darius Moshfeghi



Registration is now open for California Retina Consultants' tenth annual Educational Meeting, to be held October 1, 2011 at the Fess Parker Doubletree Resort. This annual educational meeting provides ophthalmologists, optometrists and other eye-care professionals with information on the latest advances in the clinical management of common retinal diseases.

Dr. Mark Humayun Keynote speakers include Dr. Mark Humayun, Professor of Biomedical Engineering and Cell and Neurobiology, and Associate Director of Research, Doheny Retina Institute, University of Southern California. Dr. Humayun is also a recent recipient of the *Associates Awards for Creativity in Research*, the highest honor the university faculty can bestow on its members for distinguished intellectual and artistic achievements. Well-known as the co-inventor of the retinal prosthesis, Dr. Humayun combines his expertise in ophthalmology and his craftsmanship in engineering to restore partial sight to the blind.

Dr. Darius Moshfeghi

Dr. Moshfeghi, Associate Professor, Eye Institute at Stanford, leads the pediatric vitreoretinal surgery service at Stanford and founded the university's Network for Diagnosis of Retinopathy of Prematurity telemedicine screening initiative, providing the largest remote screening of ROP in the country. His research interests include pediatric vitreoretinal diseases, quantitative image analysis, AMD, and ocular oncology.

Started a decade ago, California Retina Consultants' Annual Educational Meeting continues to grow, attracting over 100 clinicians from all over California and the surrounding Western states. The meeting offers a mix of lectures, case presentations, expert guest speakers and panel discussions, encouraging audience participation and an exchange of information and ideas.

Registration is open to eye care professionals only. To register, please visit www.californiaretina.com or call Tamara Norton at (805) 963-1648.

<p>Santa Barbara Offices 515 E. Micheltorena St.; Ste C Santa Barbara, CA 93103 (805) 963-1648</p> <p>29 W. Anapamu St. Santa Barbara CA 93101 (805) 681-8950</p> <p>Research Foundation 515 E. Micheltorena St.; Ste G Santa Barbara, CA 93103 (805) 884-5185</p>	<p>Santa Maria Office 1510 E. Main St.; Ste 103 Santa Maria, CA 93454 (805) 922-2068</p>	<p>Oxnard Office 1801 N. Solar Dr.; Ste 145 Oxnard, CA 93030 (805) 983-8808</p>	<p>Bakersfield Office 5329 Office Center Ct.; Ste 120 Bakersfield, CA 93309 (661) 325-4393</p>
	<p>Valencia Office 27420 Tournay Rd.; Ste 170 Valencia, CA 91355 (661) 253-2939</p>	<p>Lancaster Office 1505 West Ave J.; Ste 303 Lancaster, CA 93534 (661) 951-9519</p>	<p>San Luis Obispo 628 California Blvd. ; Ste D San Luis Obispo, CA 93401 (805) 781-0292</p>
	<p>Lompoc Office 611 E. Ocean Ave. Lompoc, CA 93436 (805) 740-3080</p>	<p>Paso Robles Office 220 Oak Hill Rd. Paso Robles, CA 93446 (805) 545-8100</p>	<p>www.californiaretina.com</p>

Robert L. Avery, M.D. Ma'an A. Nasir, M.D. Dante J. Pieramici, M.D. Alessandro A. Castellarin, M.D.
Robert F. See, M.D. Stephen S. Couvillion, M.D. Nathan C. Steinle, M.D.

Medical Director: Dante J. Pieramici, M.D.
Director of Research: Melvin Rabena

Editor: Ann Muchnick

Design & Production: Matthew Giust
Practice Administrator: Alison Ratliff



CALIFORNIA RETINA RESEARCH FOUNDATION
515 E MICHELTORENA ST STE G
SANTA BARBARA, CA 93103-4227