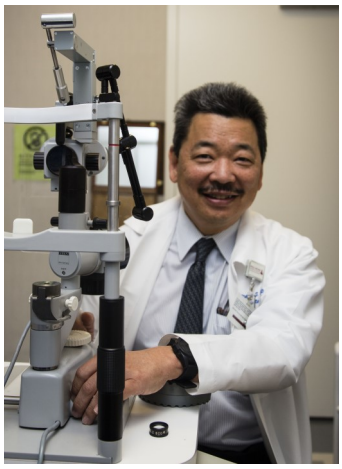
RCH RETINA CONSULTANTS OF HAWAII

Retina Consultants of Hawaii Newsletter VOLUME FOUR ISSUE 2—Winter 2015

A Letter from the Medical Director



As the late Steve Jobs once said at the Stanford Commencement Address in 2005, "Your work is going to fill a large part of your life, and the only way to be truly satisfied is to do what you believe is great work. And the only way to do great work is to love what you do. If you haven't found it yet, keep looking. Don't settle. As with all matters of the heart, you'll know when you find it. And, like any great relationship, it just gets better and better as the years roll on. So keep looking until you find it. Don't settle."

As we tend to do during the holiday season and new years, I tend to look back and reflect upon my career in managing retinal disease, retinal surgery, and retinal research. I feel very blessed and extremely privileged to have found the work that I truly love, and that pursuit just gets better and better. I am lucky to have trained under the best minds in the retina world, including Dr. J. Donald M. Gass at the Bascom Palmer Eye Institute, and Professor Alan Bird at the Moorfields Eye Hopsital in London. In addition, our research has helped us develop relationships with key thought leaders and colleagues in Asia, South America and Europe, as well as throughout the USA.

We are doing great things as an organization in bringing new research discoveries to Hawaii, the nation, and the world. We have as finely trained retinal specialists and surgeons as anywhere in the world who have trained at world class institutions. I am so proud of the staff that we have recruited and trained into a great team of caregivers. In addition, we have world-leading technologies, such as the first bionic eye epiretinal microchip implants in the Asia Pacific region placed to create artificial vision in blind patients with retinitis pigmentosa. We are one of the first sites in the nation to work with Zeiss on the first FDA approved OCT angiograpy technology, which allows us to image retinal vessels with incredible detail and precision without the need for an intravenous injection of dye. Presently, we are the only site in Hawaii to have this new OCT angiography technology, and our staff is helping to lead Zeiss in its development of this technology.

Retina Consultants of Hawaii (RCH) is truly blessed to have the privilege of providing care to the people of Hawaii, the visitors to Hawaii, and to our international referrals. We always appreciate that patients, physicians, and eye specialists from Hawaii have entrusted the care of their patients with retinal diseases to RCH. We will continue to work hard to not only provide the leading retinal care in Hawaii, but also help to lead the world with our presentations and research nationally and internationally.

Best Regards, and Happy Holidays,

Gregg T. Kokame MD MMM
Medical Director, Hawaii Macula and Retina Institute
Managing Partner, Retina Consultants of Hawaii

HAWAII MACULA AND RETINA INSTITUTE
Revolutionary Research with World-Wide Impact

OCT Angiography Reaches Hawaii

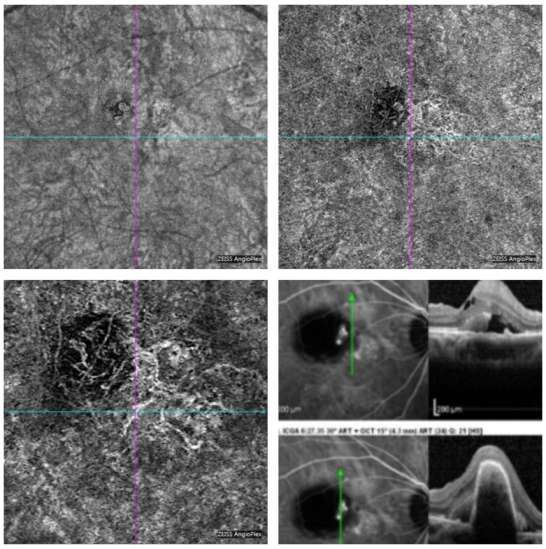
There is an exciting advancement in retinal imaging in ophthalmology, and it has already reached Hawaii at Retina Consultants of Hawaii, Inc.

Currently, the only option for imaging of retinal and choroidal vasculature is through fluorescein angiography (FA) and indocyanine green angiography (ICG). These imaging modalities are used to diagnose and manage diseases of the posterior segment. Both FA and ICG produce detailed and valuable images and information for the ophthalmologist, but are invasive for patients and time-consuming in clinic. It requires an injection of sodium fluorescein dye for FA and indocyanine green for ICG into the patient's bloodstream, in order to view blood vessels in the retina and choroid. Infrequently, the dyes have side effects such as nausea, vomiting, and rarely an allergic anaphylactic reaction. A careful injection of dye by a skilled photographer takes time in a busy clinic.

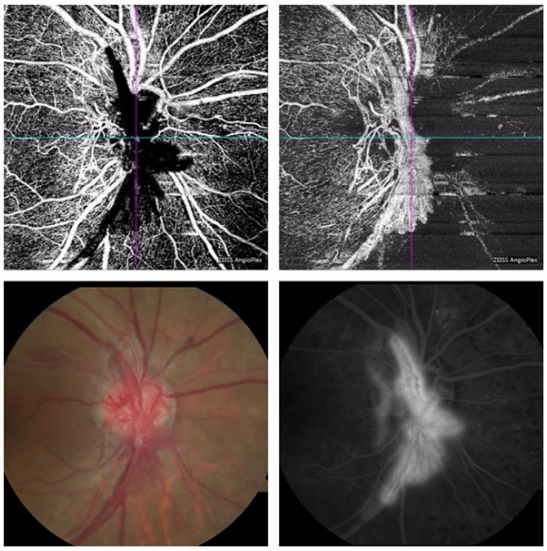
Recently, Carl Zeiss Meditec, Inc. has developed a new imaging technology that could possibly replace the gold standard of FA and ICG. It is called optical coherence tomography angiography (OCTA). It is non-invasive for the patient and does not require an injection of dye. Instead, OCTA follows a similar method to imaging techniques of the general OCT, but OCTA provides visualization of microvascular blood flow.

OCT Angiography has many potential advantages to traditional imaging techniques. Not only is it capable of showing vascular abnormalities, it can also create intensity based OCT cross sections and en face visualization that can identify structural changes such as increased retinal thickness. Blood flow can also be detected in three dimensions on OCTA, giving depth information. In FA and ICG, all depths are combined in one image. One slight disadvantage of the current OCTA technology is that it cannot give detailed information on leakage like an FA image can, because leakage is slow in the retina. However, the OCTA technology can detect signs of leakage.

RCH received the new OCTA technology in early October. Dr. Gregg Kokame is optimistic for OCTA technology to continue to advance his world-known research in polypoidal choroidal vasculopathy.



An example of OCT Angiography images of PCV.



Neovascularization of the Disc, OCT Angiography on top, and Fundus Photo and FA images on bottom.

Retina Consultants of Hawaii Hosts Two Visiting Fellows

Jessica Shantha, MD—*Research Fellow from Atlanta, Georgia*

RCH has the honor of hosting Dr. Jessica Shantha for her retina research fellowship. Dr. Shantha is from Atlanta, Georgia, where she attended medical school at the Morehouse School of Medicine, and also where she completed her ophthalmology residency at the Emory University School of Medicine. She spent her transitional residency year at St. Luke's Medical Center in Denver, Colorado. Dr. Shantha, a bright, involved, intelligent fellow, is excited to be learning from Drs. Kokame, Lai and Wee.

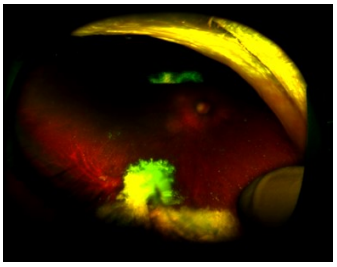
One of Dr. Shantha's proudest accomplishments is her work on the "Quiet Eye West Africa" team, under the World Health Organization. As an ophthalmology consultant on the team, she traveled to Sierra Leone, where she provided care for Ebola virus survivors and guidance for in-country eye care providers. Her groundbreaking work on the Ebola virus in the eye has been published in the New England Journal of Medicine.

During her time here at RCH, Dr. Shantha plans to expand her knowledge on medical and surgical management of retinal disease and on current areas of retinal research. Dr. Shantha is currently applying for a uveitis fellowship, and in the future, she hopes to deliver uveitis ophthalmic care, specifically in resource limited settings domestically and internationally.

Alex Pisig, MD—*Retina Fellow from Manila, Philippines*

Dr. Alex Pisig is our current International Retina Fellow, with an eagerness to learn and help our clinic. He is an ophthalmologist from the Philippines who finished medical school at the University of Santo Tomas, in Manila, Philippines. He completed ophthalmology residency training at Cardinal Santos Medical Center in San Juan, Metro Manila, where he also mentored residents and practiced comprehensive ophthalmology for a few months prior to coming to Hawaii. He has a special interest in the diseases and treatment of vitreous and retinal diseases, which is why he came to the Retina Consultants of Hawaii for further exposure to this subspecialty. His program is sponsored by the John A. Burns School of Medicine, of the University of Hawaii, under the directorship of Dr. Gregg Kokame, who is also an active professor from its Department of Ophthalmology. There is a number of ophthalmologists from the Philippines who underwent fellowship under Dr. Kokame and his reputation among local peers is well-known and respected. Dr. Pisig says "the The Retina Consultants of Hawaii is the perfect place to have optimal learning experience on retinal diseases: there is a large Asian patient base similar to the Philippines, the center offers the most advanced technology, diagnostics, and treatment options for patients, and not to mention some of the best retina specialists in the country in the persons of Drs. Gregg Kokame, James Lai, and Raymond Wee." He hopes to further his vitreoretinal surgical fellowship upon completion of his retinal fellowship, and plans to go back to practice in the Philippines and bring his new knowledge and skills.

Clinical Trials– Enrolling Now!



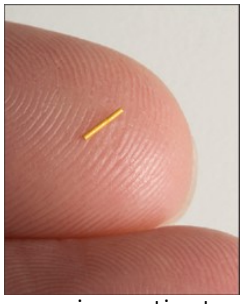
WET AMD: LHA510 Study– A study investigating the effectiveness of LHA510 topical therapy for maintenance of Wet AMD for patients with prior treatment Wet Age-related Macular Degeneration.

WET AMD: HAWK Study- A study investigating the effectiveness of RTH258 every three months, compared to two months, versus aflibercept to treat treatment naïve Wet Age-related Macular Degeneration.

WET AMD: CEDAR Study– A study investigating the effectiveness of Abicipar Pegol every 2 or 3 months, versus ranibizumab to treat treatment naïve Wet Age-related Macular degeneration.

Dry AMD: CHROMA Study- A study investigating the effectiveness of Lampalizumab injections every 30 or 45 days in patients with Dry Age-Related Macular Degeneration. There is no current FDA-proven treatment for Dry AMD.

DME: PALADIN Study– A study assessing patient outcomes of FDA-approved Iluvien for Diabetic Macula Edema. One intravitreal injection of Iluvien® (pictured below, provided by sponsor *Alimera*) can last up to three years.



Retinitis Pigmentosa: Post Approval Study for Argus II- A study assessing patient outcomes of the FDA-approved Argus II bionic eye.

PCV: HD-OCT Angiography Study– Dr. Gregg Kokame's independent study using the new Zeiss HD-OCT angiography technology to take non-invasive images of active polypoidal choroidal vasculopathy, compared to fluorescein and indocyanide angiography.

Ongoing Clinical Trials– Enrollment Complete

PCV: EPIC Study– Dr. Gregg Kokame's independent study investigating the effectiveness of monthly or bimonthly injections of Eylea, for patients that have previously or not previously received treatment for polypoidal choroidal vasculopathy.

VMA: ORBIT Study- A study assessing patient outcomes of FDA-approved Jetrea to treat Vitreomacular Adhesion.

WET AMD: VAPOR Study– A study investigating the effectiveness of DE-120 as needed to treat Wet Age-related Macular Degeneration. DE-120 forms a cauliflower-looking depot in the eye (see image at top of page, provided by sponsor *Santen*, of the depot, captured by the OPTOS machine). DE-120 could prolong the time needed between treatments.

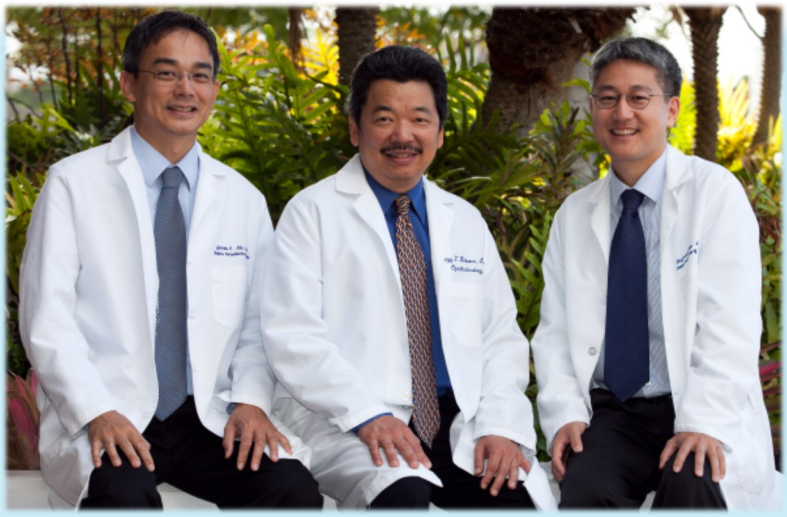
For referrals, or if you have any questions, please contact our Research Department at (808) 380-8060.

Please visit our website: ***www.retinahi.com*** *and our research website:* ***www.hawaiimacula.com***

Our doctors are listed as

Best Doctors in Hawai'i

in Honolulu Magazine!



From left to right: Dr. James Lai, best MD for 8 years; Dr. Gregg Kokame, best MD for 15 years; Dr. Ray Wee, best MD for 3 years.

RCH Retina Consultants of Hawaii

Visit our Websites today!

www.retinahi.com

This is our clinic website. Visit this website for recent news stories, to learn about our three doctors, for information on our different clinic locations and to read our blog! The blog highlights current events at RCH, discusses frequently asked questions about the retina, and more.

HAWAII MACULA AND RETINA INSTITUTE

Revolutionary Research with World-Wide Impact

www.hawaiimacula.com

This is our research website. Visit this site for information on Hawaii Macula and Retina Institute's latest research, its current clinical trials, recent publications, and other exciting advances in retina research.

Recent Lectures

November 17, 2015.: American Academy of Ophthalmology Instructional Course: Diagnosis and Treatment of PCV. Gregg T. Kokame, MD, MMM. American Academy of Ophthalmology. *Las Vegas, Nevada.*

November 15, 2015: American Academy of Ophthalmology Advisory Board: PCV- A Worldwide Problem. Gregg T. Kokame, MD, MMM. American Academy of Ophthalmology. Annual Meeting. *Las Nevas, Nevada.*

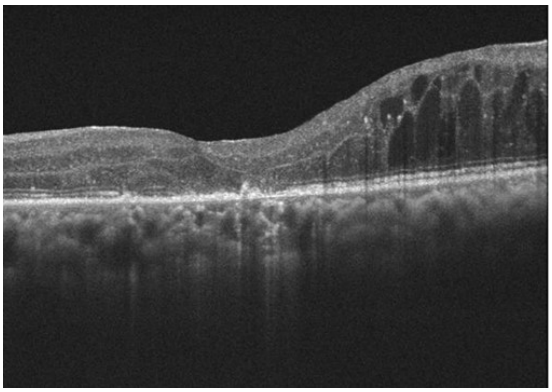
August 2, 2015: Epiretinal Prosthesis for Retinitis Pigmentosa. Gregg T. Kokame, MD, MMM. Macular Surgery Symposium. Asia Pacific Vitreoretinal Society. *Sydney, Australia.*

July 19, 2015: En Face OCT Findings in Polypoidal Choroidal Vasculopathy. Gregg T. Kokame, MD, MMM. American Society of Retina Specialists. Annual Meeting. *Vienna, Austria.*

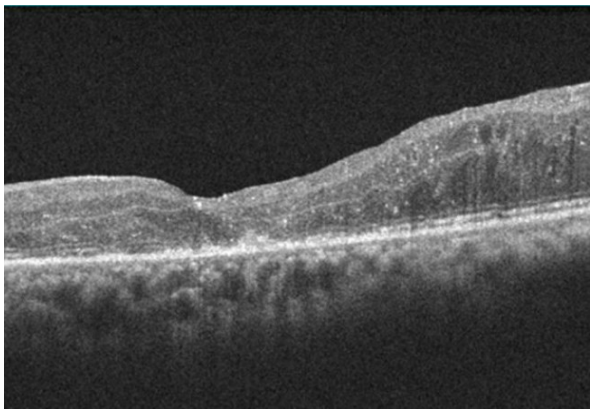
Dr. James Lai performs the first ILUVIEN implant in Hawaii

Dr. James Lai treated a diabetic patient with the first ILUVIEN® implant in the state of Hawaii this September. ILUVIEN® is a fluocinolone acetonide (0.2 micrograms/day) sustained release intravitreal implant. It is approved by the FDA and became commercially available in February 2015 for use in patients with diabetic macular edema (DME). It can last up to three years. Prior to Iluvien, patients needed injection treatments as often as monthly.

Roberta Supebedia is the first patient that received this treatment in the state of Hawaii. She has recalcitrant DME in both eyes requiring multiple injections with Anti-VEGF therapy and corticosteroid implants. She describes her experience of that of "amazement" and is eager to have the implant placed in the other eye, especially because it is a long term therapy. PALADIN is a phase 4 clinical trial with a goal to further investigate the long term outcomes of the ILUVIEN® implant. Retina Consultants of Hawaii, Inc. is currently enrolling patients who meet criteria for treatment with ILUVIEN®.



At left, Supedia's left eye before Iluvien treatment. Right, her left eye one month post-treatment.



RCH: An Educational Research Hub for Medical Students

Drs. Kokame, Lai, and Wee are influential mentors for University of Hawaii's John A. Burns School of Medicine (UH JABSOM) medical students with interests in ophthalmology, and are honored to have the students' help in retrospective research at Retina Consultants of Hawaii.

One of our current retrospective studies is on the effects of Combined Victrectomy/Cataract Surgery. Rajinder Nirwan, MD, now a transitional year resident, is finishing the project. Christine Chan, Julia Ayabe, and Ryan Yanagihara, all current UH JABSOM medical students, and previous research personnel at RCH, also aided in this project. Nirwan and Chan presented the research at the Study Club for Ophthalmological Research in Hawaii, and Nirwan is writing the manuscript for publication.

Holly Harada, an undergraduate pre-medical student at University of Southern California, began a retrospective study this past summer on patients who completed Dr. Kokame's PEARL2 study on the effects of ranibizumab on polypoidal choroidal vasculopathy. Shannon Kogachi, who has a master's degree in clinical research and is a current UH JABSOM medical student, is continuing this study.

Ryan Yanagihara also worked on a retrospective research study on long-term follow-up on the efficacy of a scleral fixated suture technique during his time at RCH. This study will also be written as a manuscript for publication. Thank you to all our medical students!

GASS Society Celebrates 10 Years

A pioneer in diagnoses of undiscovered retinal diseases, brilliant yet humble, generous and kind, infectiously enthusiastic for learning and exploring, lovingly dedicated to his family… these are just a few of the ways Dr. Gregg Kokame describes his incredible mentor, Dr. Donald Gass. Dr. Kokame is one of the founders of the GASS society in honor of Dr. Gass, who passed away in 2005.

The goals of the GASS society are to continue Dr. Gass' work by those who were most influenced by him, and to remember and honor the person and doctor that his mentees, colleagues, and his co-faculty at Vanderbilt University and Bascom Palmer Eye Institute admired.

The GASS society celebrated its 6th meeting at the American Academy of Ophthalmology in Las Vegas, Nevada in November. At the meeting, members presented intriguing imaging cases for discussion, as well as stories and memories of Dr. Gass.

In 2012, the GASS society celebrated the arrival of the 5th edition of the *Gass Atlas*, the trusted authority for macular disease. Congratulations to author Dr. Anita Agarwal for this incredible accomplishment. *Pictured at top right, Dr. Donald Gass, and from bottom left to right, Dr. Gregg Kokame, Dr. Anita Agarwal, and co-founder of the GASS society, Dr. Alex Hunyor, with the 5th edition of the Gass Atlas.*

Dr. Kokame continues to be a published author!

Dr. Gregg Kokame is known internationally for his research on polypoidal choroidal vasculopathy. He has recently published two articles this year in ***Ophthalmologica*** *2015, as a co-author on PCV in Brazilian patients, and in* ***Jama Ophthalmology*** *2015, as a primary author on PCV and Indocyananine Green Angiography and En Face Optical Coherence Tomography.*

Congratulations to Dr. Kokame!

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RCH RETINA CONSULTANTS OF HAWAII

2015 HONOLULU Magazine's TOP DOCTORS IN HAWAI'I

Retina Consultants of Hawaii

Clinic Locations

Pali Momi Medical Center
98-1079 Moanalua Rd, Ste 470
(808) 487-8928

Kuakini Medical Plaza
321 North Kuakini Street,
Suite 307
(808) 523-6131

Queen's POB I
1380 Lusitana Street,
Suite 506
(808) 545-7036

Neighbor Island Clinics
Toll Free (877) VIT-RET1