

UMASS INSIGHT



News from the Department of Ophthalmology & Visual Sciences



UMASS MEMORIAL
EYE CENTER

Spring 2019

INSIGHT FROM THE COO AND EXECUTIVE VP

Looking at the UMass Memorial Eye Center (no pun intended!), I see a team that has developed into a highly effective group of caregivers. It's an accomplishment that has made you exemplary no matter the challenge — whether it's onboarding new team members, serving your many patients as you grow, or working across the many sites you've expanded to. So how do you ensure you'll sustain this success and health? Through respect for one another. I know that the entire Eye Center has participated in the Standards of Respect workshop and I encourage you to continue to reflect on what you've learned, even though they can seem natural already:



- **ACKNOWLEDGE**
- **COMMUNICATE**
- **BE A TEAM PLAYER**
- **LISTEN**
- **BE RESPONSIVE**
- **BE KIND**

In fact, it takes practice to identify and address moments when you or someone else is feeling disrespected. Our Organization and People Development team has established ways to facilitate healthy discussions using a spinning wheel, a fun way to keep the conversation going and further develop your skills of awareness as to how your team is exhibiting the Standards of Respect. Soon, you'll become very comfortable with discussing these standards and sharing and requesting feedback from one another.

Having gone through the training myself, I have found it very helpful to take a step back regularly to remember the things that resonated for me as an individual and for my team as well. Give it a try! Thanks for all you do and I'm confident the Eye Center can accomplish even more as you further grow and exemplify these standards.

Michele Streeter
Executive Vice President and Chief Operating Officer

Find us online for the latest, research, publications, faculty updates & more at www.umassmed.edu/ophthalmology.



UMassMemorial
Medical Center



University of
Massachusetts
Medical School

INSIGHTS IN THIS ISSUE

EDUCATIONAL

Exciting and New:
Ophthalmology Residency
Training Program

CLINICAL

Meet Suzanne Johnston,
MPH, MD, Pediatric
Ophthalmologist

FACULTY

Juan Ding, OD, PhD:
Establishing a New Eye
Clinic at University Campus

STAFF

David Rivera, COA

STUDENT

Aviel Hadad, MD, completes
UMass Medical School/Ben-
Gurion Exchange Program

RESEARCH

Claudio Punzo, PhD:
Developing a Treatment
for Inherited Retinal
Degeneration

UMASS INSIGHT

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FROM THE CHAIR

Dear Colleagues and Friends,

My delight, pleasure and pride in leading the Department of Ophthalmology & Visual Sciences at the University of Massachusetts Medical School, is the visible change and the palpable progress that we achieve together by working as an eye team. I feel privileged to be able to work with such a dedicated, motivated, and creative team of physicians, researchers, and staff. As I edit our Spring Edition of our InSight newsletter, I am blown away by how much we have transformed and improved, together, as a team, since our last newsletter.

The incredible advancement is reflected in all of our four missions: in the excellent clinical care that we provide to our patients (now in three different locations), in the cutting-edge research that we do, in our constant outreach to the Worcester community, and in our work on our educational mission, which bore fruit recently by the historic approval of our Ophthalmology Residency Training Program.

I am thankful to the Eye Team members and to senior leadership for supporting our efforts. I would like to share with you some of our senior leaders' comments, that reflect their enthusiasm and strong support of our team. "We are delighted to welcome the first ophthalmology residents to our community," said Michael F. Collins, MD, FACP, chancellor of the Medical School. "I commend Dr. Schaal and her colleagues for achieving this important milestone in the successful trajectory of her academic department." Dean of the Medical School, Terrance Flotte, MD, added, "This new ophthalmology



residency represents a quantum leap forward for the department, in terms of its national stature and its capacity to successfully fulfill all of its missions, clinical as well as academic." Steve Tosi, MD, president of UMass Memorial Medical Group said, "The recent announcement that the Department of Ophthalmology & Visual Sciences has been granted a residency program is a crowning achievement. It enhances the

reputation and national prominence of our dynamic department, which is already excellent in the areas of patient care and research." Michael Gustafson, MD, president of UMass Memorial Medical Center said, "The addition of a residency training program will not only help the department touch even more patients' lives throughout Central Massachusetts, but will also enable the team to train the next generation of eye health specialists, researchers and innovators for this region." Eric Dickson, MD, president and CEO of UMass

Memorial Health Care, summarized nicely, "We could not be more excited. For the first time in our history we are going to have an ophthalmology residency. It is amazing how far the department has come in such a short period of time."



Shlomit Schaal, MD, PhD
Professor and Department Chair

EDUCATIONAL INSIGHT

EXCITING AND NEW: OPHTHALMOLOGY RESIDENCY TRAINING PROGRAM AT UMASS MEDICAL SCHOOL

The Department of Ophthalmology & Visual Sciences at the University of Massachusetts Medical School is proud to announce the beginning of our new Accreditation Council for Graduate Medical Education (ACGME)-approved Ophthalmology Residency Training Program. “We are committed to exceptional resident education,” stated **Misha Faustina, MD, FACS**, director of medical education for the department. The objectives of the program include, providing excellent comprehensive clinical training in all aspects of medical and surgical ophthalmology, and to create an atmosphere and enthusiasm for discovery and service. Two resident physicians will be added annually. At the start, all applicants must complete one post-graduate year (PGY) of prerequisite training in an ACGME-approved program prior to beginning a PGY-2 Ophthalmology Residency position. As the ACGME shifts to a four-year ophthalmology training program, the Medical School is poised to offer an integrated internship in future classes. Two residents were selected for the 2019 class. The program is now accepting applications for its 2020 class.

For more information about our residency program, please contact us at umassophtho@umassmed.edu and view our website www.umassmed.edu/ophthalmology/education/residency-program



In this Voices of UMassMed podcast, **Shlomit Schaal, MD, PhD**, discusses the importance of eye health and how technology can help identify disease in a non-invasive way. LISTEN www.umassmed.edu/voices/schaal

CLINICAL INSIGHT

MEET SUZANNE JOHNSTON, MPH, MD, PEDIATRIC OPHTHALMOLOGIST



The UMass Memorial Eye Center continues to expand its clinical capabilities with the expertise of pediatric ophthalmologist **Suzanne Johnston, MD, MPH**, of Boston Children’s Hospital.

“Dr. Johnston provides evaluation, diagnosis, and medical and surgical treatment for a full range of eye conditions that affect children, including eye misalignment problems in children,” said **Shlomit Schaal, MD, PhD**, chair of the Department of Ophthalmology & Visual Sciences, adding, “Dr. Johnston brings more than 20 years of extensive experience in pediatric strabismus along with pediatric glaucoma, and child and adolescent development of the eye. Her expertise in pediatric strabismus will be especially valuable to our team in helping to detect and treat this common vision development condition early.”

Dr. Johnston is working at the Eye Center, located at UMass Memorial Medical Center–Hahnemann Campus, the first and third Thursday of every month. Physicians wishing to schedule patients with Dr. Johnston should call the Eye Center directly at 508-334-4637.

UMASS INSIGHT

News from the Department of Ophthalmology & Visual Sciences

FACULTY INSIGHT

ESTABLISHING A NEW EYE CLINIC AT THE UNIVERSITY CAMPUS

Juan Ding, OD, PhD, optometrist at UMass Memorial Eye Center, led a project to establish and improve a novel optometry clinic at the Ambulatory Care Center (ACC), located at UMass Memorial Medical Center–University Campus. She worked on this project as part of the Junior Faculty Development Program (JFDP) at the University of Massachusetts Medical School, mentored by **Sheri Keitz, MD, PhD**, division chief, General Internal Medicine at the Medical Center, and vice chair, Clinical Affairs Department of Medicine at the Medical School. **Manisha Anand**, a certified ophthalmic assistant (COA), at the Eye Center, helped Dr. Ding on this project as part of earning her Lean Green Belt. In a series of Kaizen (rapid improvement) events facilitated by specialist, Nick Comeau, stakeholders gradually incepted and made continuous improvements to the novel eye care model. The idea at the inception was to be able to provide immediate eye care to diabetic patients, who are seen at the Diabetes Center of Excellence at the ACC. “This clinic has expanded in scope, and allows us to see, not only diabetic, but any patient for routine eye exams, including children from ages 6 months and up,” said **Justine Grier, DO**, who joined the team. Over the past year, patient volume has steadily increased from close to no patients, to more than 300 patients seen every month. **Adam Champagne**, ambulatory services representative (ASR), can boast high access to care reflected by 88% of patients seen within 14 days and a five day/week open-access walk-in clinic, where patients can be seen without prior appointment. “This new clinic significantly improved the compliance of diabetic patients with their annual eye exams. Patients are highly satisfied with the clinic; in a recent survey, 100% of patients said they would recommend it to their family or friends,” said Dr. Ding. The preliminary data obtained from this project has been accepted for presentation at the 2019 meeting of the American Optometric Association.

Dr. Ding was awarded the “Excellence in Science Award” for this work during Diabetes Day at the Medical School.



Left to right, Manisha Anand, COA, Dr. Juan Ding, Dr. Justine Grier, and Adam Champagne, ASR.

STRONG PRESENCE OF UMASS OPHTHALMOLOGY AT ARVO 2019

The Association for Research in Vision and Ophthalmology (ARVO) annual meeting took place this year in Vancouver, Canada. The theme of the meeting was: “From Bench to Bedside and Back,” which is perfectly aligned with the type of research we do in our department. This year at ARVO, our department had 13 scientific presentations, at least one presentation for every day of the conference.

This strong research presence compares and exceeds many ophthalmology academic departments in the nation, and in the world. “I am very proud of all our researchers, and clinician-scientists, who worked diligently every day to be able to present their work at ARVO,” said **Shlomit Schaal, MD, PhD**, chair, Department of Ophthalmology & Visual Sciences. “**Hemant Khanna, PhD**, associate professor and **Krasimir Tolev**, ophthalmic technician, did a wonderful job putting together a nice table on our website, that includes the dates and the links to all our abstracts.” See photos from ARVO on page 5.

Please follow the link to learn more:
www.umassmed.edu/ophthalmology/news--events/2019/04/arvo-2019/

News from the Department of Ophthalmology & Visual Sciences

STAFF INSIGHT

DAVID RIVERA, COA

My name is David. I started my career in ophthalmology in 2005 and soon after obtained my certification as an ophthalmic assistant (COA). I have been with the UMass Memorial Eye Center since December of 2014. Working here at the Eye Center has been a wonderful experience and I have been able to learn and grow in ways I didn't know possible. I am preparing for the next level of certification, a certified ophthalmic technician (COT). This test consists of a written and a practical exam. I hope to achieve this next level in the near future.

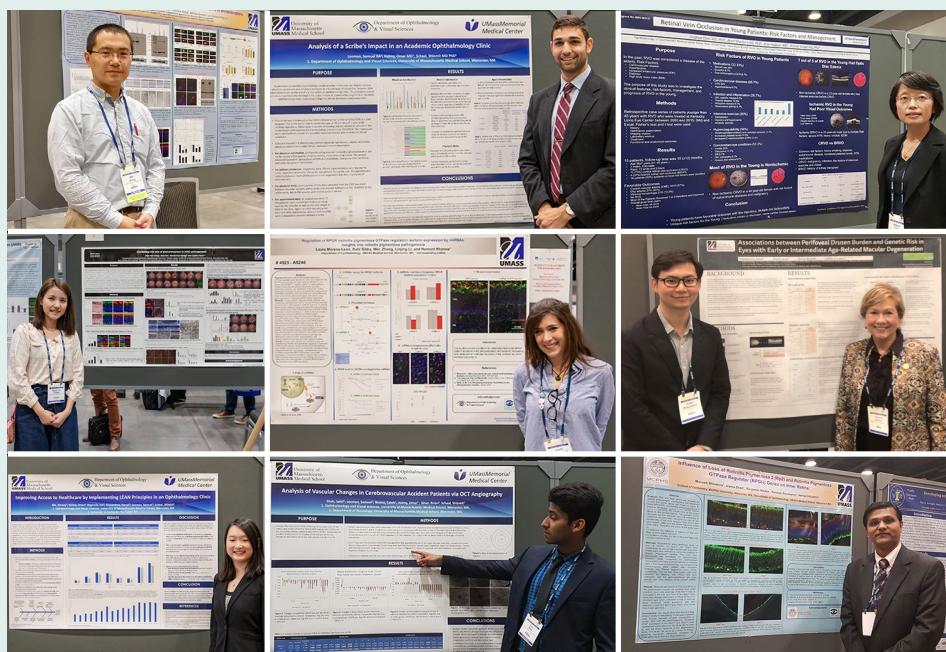
The doctors and staff at the Eye Center are dedicated to caring for our patients and this makes working here worthwhile. We, at the Eye Center, truly care about the service we provide to the community and, with each day that passes, we look for ways to improve this service. We also look for ways to improve ourselves individually, and as a whole.

I hope that in the future, as the Eye Center continues to grow and improve, we become one of the greatest



David Rivera (center), receiving a certificate of appreciation for outstanding service in promoting the department's mission from Dr. Shlomit Schaal and Darlene Bocash-Winn, manager of clinical operations.

establishments and clinics that UMass Memorial Health Care has ever seen. I realize that, in order to grow and expand, there is and will be a lot of work to be done. It is through that work and willingness to continue to move forward, that we will strive for the ultimate goal that we have set in place to become the best to our community and to each other.



ARVO 2019 PRESENTERS

Travel Grant Recipients:
Shun-Yun Cheng
Wendy Ma
Wei Zhang, PhD

Members-In-Training
Laura Moreno-Leon, PhD

Top row: Wei Zhang, PhD; Samuel Leeman, BA; Jinghua Chen, MD, PhD

Middle row: Shun-Yun Cheng; Laura Moreno-Leon, PhD; Rafael Widjaja-hakim, MS; Johanna M. Seddon, MD

Bottom row: Wendy Ma; Salil Shah; Mahesh Shivanna, PhD

STUDENT INSIGHT

AVIEL HADAD, MD, MPH, COMPLETES THREE-MONTH RESEARCH ROTATION AT THE EYE CENTER AS PART OF THE UMASS/BEN-GURION STUDENT EXCHANGE



Dr. Aviel Hadad receiving a certificate of completion for the Ben-Gurion Exchange Program from Dr. Shlomit Schaal.

Aviel Hadad, MD, MPH, enjoyed the last three months in a research rotation in the Department of Ophthalmology & Visual Sciences at the University of Massachusetts Medical School, as part of the UMass/Ben-Gurion exchange program. Dr. Hadad is originally from Kibbutz Keramim in Southern Israel. He is married and is a father to three children. He earned his master's degree and his medical degree from the Hebrew University at Jerusalem, Israel. Currently, he is a fifth-year (last year) resident in Department of Ophthalmology at Soroka, the major hospital in Southern Israel, affiliated with Ben-Gurion University.

During his time at the Medical School, he embarked on an original research study. He investigated the correlation of chronic exposure to a specific drug, Elmiron, to possible changes in the retinal pigment epithelium, and retinal toxicity. His work focused on

developing novel analytic tools of advanced imaging modalities, and developing new quantification methods that allow discovery of drug toxicity in patients. This work is the first of its kind, and could help in the future identification of drug toxicity to the retina. His method can be used not only for this drug, but for many other drugs as well. He is now summarizing the results in a manuscript that will be submitted to the prestigious journal: *Investigative Ophthalmology & Visual Sciences*. He will also present part of this original work at the Retina Society Annual Meeting in London in September 2019.

During his three months at the Medical School, Dr. Hadad was most impressed by the collaborative research environment, in which he thrived and learned tremendously. He learned from numerous mentors and teachers, and had an active part in interesting scientific and clinical discussions, and in Vision Seminars. His most influential mentor was **Shlomit Schaal, MD, PhD**, chair of the Department of Ophthalmology & Visual Sciences at the Medical School, who generously shared her passion for research and her desire to teach. His experience at the Medical School was indeed so meaningful and inspiring, that he is now seriously considering embarking on a PhD program to further his research knowledge and skills.

This precious opportunity was possible only thanks to the generous donation from Frederick Krupp Medical Education Fund. Dr. Hadad and his mentor, Dr. Schaal, would like to express their deepest gratitude and appreciation to the family of Mr. Frederick Krupp for their generous support of this significant professional experience.

"I am very grateful to all the people from the University of Massachusetts Medical School and from Ben-Gurion University who made all this a reality. Specifically, I am thankful to Professor Tova Lifshitz, chair of Ophthalmology at Soroka, and Dr. Erez Tsumi, deputy director, for their encouragement and support that allowed me to enjoy this remarkable period," said Dr. Hadad.

RESEARCH INSIGHT

DEVELOPING A TREATMENT FOR INHERITED RETINAL DEGENERATION

CLAUDIO PUNZO, PHD

Retinitis pigmentosa is the largest family of inherited retinal degeneration affecting approximately 1:3,000 individuals. Blindness is the inevitable outcome of the disease. With over 60 genes identified that, when mutated, cause retinitis pigmentosa, and with over 200 individual mutations mapped, it is difficult to develop mutation-specific gene therapies for all affected individuals. Thus, the mutation-independent approach is an attractive alternative for disease treatment. One peculiarity about the disease progression is that mutations that affect a gene that is exclusively expressed in the night-active rod photoreceptors still lead to the loss of the day-active cone photoreceptors and thus results in blindness. For decades, scientists have struggled to understand this interdependence between rods and cones. In 2009, Claudio Punzo, PhD, professor of ophthalmology at the University of Massachusetts Medical School, proposed that the secondary loss of the day active cones is due to inadequate nutrient supply, in particular glucose, that is brought upon by the disruption of the retinal architecture due to the loss of the more abundant rod photoreceptors. Following on his pioneering work of 2009, Dr. Punzo showed in 2015, that activation of genes that make cone cells metabolically more similar to cancer cells, significantly prolongs cone survival and thus vision in retinitis pigmentosa. Dr. Punzo found



Claudio Punzo, PhD
Professor of Ophthalmology

that enhancing glucose uptake, retention and metabolism in cones makes them more resistant to the nutrient shortage. "While these experiments were performed in mice with genetic tools that cannot be used in humans, they inform us how to develop a therapy," said Dr. Punzo.

Currently, Dr. Punzo is translating his findings into a gene therapy approach that can be used in humans. The goal is to make cones more resistant to the glucose shortage by improving glucose uptake and retention using recombinant Adeno Associated Virus mediated gene transfer to cones. Dr. Punzo is testing

several candidate genes he identified from his studies in mice in the hope that, when these genes are overexpressed in human cones, they delay their death and thus prolong vision in retinitis pigmentosa.

Dr. Punzo obtained his doctorate degree from the University of Basel where he worked under the guidance of Walter Gehring, PhD, on the development of the visual system in fruit flies. After receiving his PhD, Dr. Punzo pursued a postdoctoral fellowship at Harvard Medical School in the group of Constance Cepko, PhD, where, together with Dr. Cepko, he proposed his new model of secondary cone death in retinitis pigmentosa. In 2010, Dr. Punzo joined the Medical School, where he is now developing a gene therapy for retinitis pigmentosa based on his pioneering findings at Harvard and during his initial years at the Medical School.

<https://www.umassmed.edu/punzolab>

News from the Department of Ophthalmology & Visual Sciences

EYE CENTER EARNS RECOGNITION AS INNOVATORS FOR TWO CONSECUTIVE YEARS

Fresh off their acceptance of the 2017 Innovators of the Year Award, the UMass Memorial Eye Center team wasted no time identifying dozens of new ideas in the hopes of earning back-to-back wins of the coveted award. With a strong focus on access, it wasn't long before the team recognized that the patient volume in the Retina Clinic went beyond the clinic's physical capacity to provide care. That's when team members had the smart idea to improve patient flow and access by separating the clinic into two areas: front part of the eye (Anterior Segment Clinic) and back part of the eye (Retina Clinic). The process improvement included a new protocol for the Injection Clinic, and also included building out a second exam room in the clinic, with a large monitor that allows physicians the ability to immediately view and study the images on-the-spot.

The innovative idea landed the team a spot as a Sweet 16 Finalist for the 2018 crown. And while a two-year sweep ultimately wasn't meant to be, the team was thrilled with their results. "We far surpassed the goals that we set in terms of how many patients we wanted to see. And really, in most categories, we've almost doubled that," said David Rivera, certified ophthalmic assistant (COA). The project started with an original idea introduced by Jason McTigue, certified ophthalmic assistant (COA), who works in the Retina Clinic, at one of the Eye Center's Idea Huddles. The idea was then embraced by everyone in the department to see to its fruition.

Congratulations to all involved. We can't wait to see what innovative ideas 2019 brings!



Happy Spring!

*Ophthalmology
Retreat at
Cyprian Keyes
May 24, 2019*

