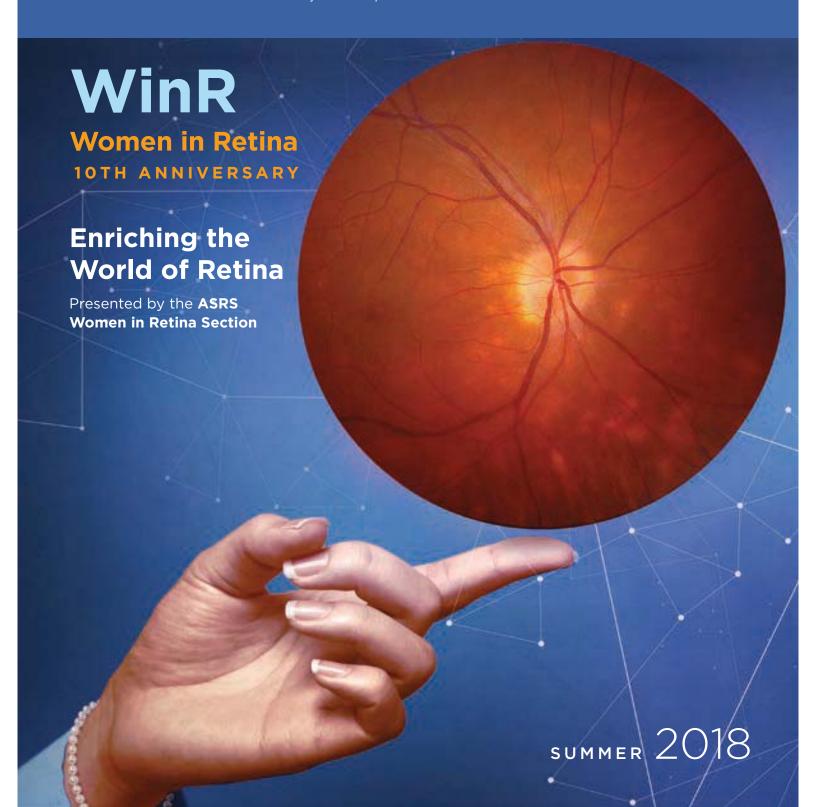
A SPECIAL SUPPLEMENT TO

RETINA TIVES

An Official Publication of the American Society of Retina Specialists







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ASRS Women in Retina Section Celebrates 10th Anniversary

As the Women in Retina Section marks its 10th anniversary, we honor an occasion nearly 60 years in the making. Author Cathleen Schine once said, "Women are in positions of power the most radical of activists could only have dreamed of in 1960."

Fortunately, Alice McPherson, MD, dared to dream big. In 1960, she became the world's first full-time woman vitreoretinal specialist and founded the retina service at Baylor College of Medicine in Houston, Texas.

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Medical Retina Fellowships: A Growing Career Option

WinR congratulates all women retina specialists for their professional achievements. The time line below includes some memorable highlights, but is not a comprehensive listing.

Alice McPherson led the way for other women retina specialists, including my own mentor, Dr. Neva Arribas, who was a practicing retina surgeon in St. Louis in the 1960s.

In 1984, nearly a quarter-century after she began her retina practice, Dr. McPherson, along with her mentee, Judith Feigon, MD, became the first women members of the Vitreous Society (now the ASRS) representing 1.5% of the 1-year-old Society's membership.

Fast-forward another 23 years to 2007. By that time, 11% of ASRS members who identified a gender in their member profiles were women—and an organization for women retina specialists was an idea whose time had come.

Why form an organization for women retina specialists?

This question became the focus of a Women in Retina Roundtable meeting on March 31, 2007 at the Hotel Sofitel in Chicago. ASRS members Pauline Merrill, Jenny Lim, Alice Lyon, Julia Haller, and I met with 3 representatives of Genentech—Carol Hoang, Anne Fields, and Leeana Carleton. Our moderator was Linda Szyper, president of Publicis Medical Education Group.

Carol Hoang introduced the meeting objective: "To gain insight into the educational and professional needs of female physicians in the area of retinal medicine and develop an ongoing forum for discussion and actions related to the stated needs."



Julia Haller becomes first woman president of ASRS

WinR in Retina

2007 Women in Retina Founded



Susan Bressler co-recipient of the ASRS Pyron Award

WinR Fluorescein Conference

2008 First Annual WinR Fluorescein Conference at the ASRS meeting in Maui



Founders' Award

2009 Emily Chew is the first woman to win the ASRS Founders





Catherine Cukras receives the Retina Society Raymond R. Margherio Award



WinR Founders Alice Lyon, MD; Pauline Merrill, MD; Nancy Holekamp, MD; Julia Haller, MD; and Jennifer Lim, MD, enjoy the 2007 ASRS Annual Meeting in Palm Springs.



Alice McPherson, MD Founder, Retina Research Foundation Founder, McPherson Eve Research Institute at the University of Wisconsin-Madison Professor of Ophthalmology Baylor College of Medicine Houston, Texas

Charles L. Schepens, MD **Opens the Door**

Dr. Alice McPherson credits the legendary Charles L. Schepens. MD-known as the father of modern retinal surgery-for giving her an unprecedented career opportunity.



"Dr. Schepens accepted me into his retina surgery program at a time when no other women had been offered this type of fellowship training," Dr. McPherson recalls. "He gave me his full support and allowed me to learn from his expertise.

"Without his training, I would have spent the rest of my life doing refractions," she adds. "But instead, I have been fortunate enough to have had an extensive vitreoretinal surgery practice and to have founded the successful Retina Research Foundation."

Pauline Merrill provided the rationale for creating a female-specific organization for women retina specialists:

- The retina community is historically male dominant.
- The number of women in retina was increasing.
- More women were in leadership positions, but they were still an exception rather than the norm.
- · No current organized group met the specific needs of female retina specialists.
- · Polled female physicians thought a women's retina organization would be valuable.

The discussion then centered on current issues—both clinical and professional—facing women in retina:

- · Involvement in key professional associations
- · Networking
- · Mentoring
- · Career advancement
- · Clinical trial involvement
- · Practice establishment

The new organization was dubbed Women in Retina, and Dr. Julia Haller—the first, and still the only woman ASRS president soon gave us our nickname, WinR. Our group brainstormed on when and how WinR would meet, and we developed some practical ideas:

- · The venue should be easy to get to, with little to no impact on families. Hence, WinR would "tag-along" to meetings women retina specialists already attend.
- · Smaller meetings and group dynamics would be significant "draws" for women retina specialists.
- · The setting should be more intimate, with open, less-formal discussions.
- Networking during WinR forums must be a top priority.

The roundtable unanimously agreed on an inclusive membership policy: If you are a woman in the ASRS, you are automatically a member of Women in Retina. Others interested in the group are welcome to participate.

Thus, in a small hotel conference room in Chicago on a cold, grey day in March more than 10 years ago, Women in Retina was born. The excitement and energy of that first meeting are captured on page 4 as WinR Secretary Camille Palma, MD, interviews the 5 founders.



Sandra Rocio Montezuma receives the Retina Society Fellowship Research Award



SRS Pyron Award

2010 Julia Haller receives the ASRS Pyron Award



SRS Founders'

2010 Joan Miller receives the **ASRS** Founders' Award



Ursula Schmidt-Erfurth is first woman to give the Retina Society J. Donald Gass Lecture



2010 WinR Logo created



The Macula Society

2011 **Emily Chew** is first woman president of the Macula Society

That discussion led to a new term—"WinR-gy" —the unique, positive vibe that comes when smart, accomplished, and creative women gather.

'The roundtable unanimously agreed on an inclusive membership policy: If you are a woman in the ASRS, you are automatically a member of Women in Retina. Others interested in the group are welcome to participate.'

What was it like for the trailblazers?

On page 7, WinR Board Members Jenny Lim and Alice Lyon talk with several women retina leaders for their perspectives on careers at a time when few women were in our field, as well as the unique challenges and opportunities for women in retina.

What's ahead?

Since WinR's founding in 2007, the percentage of women members who identified a gender in their ASRS member profiles has increased from 11% to 17%—and the proportion of women fellow-in-training members is nearly double that, at 33%. Given that 50% of today's ophthalmology residents are women, these percentages will certainly continue to

WinR will be here to support the growing number of women retina specialists throughout their careers, focusing on key topics of interest. On page 14, Manjot Gill, MD, leads a discussion with several of her women mentors and peers on issues facing women in retina.



Mark S. Humayun, MD, PhD President, ASRS

Congratulations, WinR

On behalf of the American Society of Retina Specialists, I am honored to congratulate the ASRS Women in Retina Section on 10 years of success through collaboration. Your talent and dedication are an inspiration to all Society members, and your mentoring program is helping to shape the next generation of women retina specialists.

On page 16, Rukhsana Mirza, MD, and her medical retina fellow, Ria Desai, MD, explore medical-only retina fellowships as a growing career option. They highlight their male mentor, Lee Jampol, MD, who created the medical retina fellowship at Northwestern University—one of the first of its kind in the United States.

There will always be changing, contemporary, and even controversial issues pertinent to women in medicine—and more specifically, women in retina. In fall 2017, the British Medical Journal published an article suggesting that patients treated by women surgeons may have better outcomes. One month later, a highly publicized working paper by a Harvard researcher found that referring doctors judge female surgeons more harshly than male surgeons when patients die.2

'WinR will be here to support the growing number of women retina specialists throughout their careers ...'

And a 2017 online Doximity survey showed that female doctors earn up to 27% less than male doctors in the same specialty.3 Thus, WinR will continue to have a purpose and a mission. WinR is eager and ready for the next 10 years and beyond.

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Sunir J. Garg. MD. FACS Editor in Chief, Retina Times

Thank you, Women in Retina

Happy 10th anniversary! It's no surprise why we call you WinRs.

Your energy, teamwork, and spirit shine through on every page of this 10-year anniversary tribute by Women in Retina, for Women in Retina.

At Retina Times, we look forward to featuring more news about WinR's mentorship program and events, as well as your perspectives on issues facing women retina specialists.



Janet Sunness receives the Macula Society J. Donald Gass Medal



Joan Miller gives the Macula Society Paul Henkind Memorial Lecture



The Macula Society

Usha Chakravarthy gives the Macula Society Paul Henkind Memorial Lecture



Lejla Vajzovic receives the Retina Society Fellowship Research Award



Joan Miller gives the AAO Jackson Memorial Lecture



2013

WinR starts the Mentoring Program, **Our Mission** is Mentoring

Camille V. Palma, MD Secretary, ASRS WinR Section Retina Services of Illinois, LLC Chicago, Illinois



In the Beginning—A Conversation With the WinR Founders

As Women in Retina celebrates its 10th anniversary, the 5 founding members reflect on the early days of WinR and how it has grown into the vibrant organization it is today.

Panelists



Julia A. Haller, MD ASRS Past President Ophthalmologist in Chief William Tasman, MD. **Endowed Chair** Wills Eye Hospital Philadelphia, Pennsylvania



Nancy M. Holekamp, MD ASRS WinR Chair Director of Retina Services Center for Macular Degeneration Pepose Vision Institute Chesterfield, Missouri



Jennifer I. Lim. MD ASRS WinR Chair Emerita and ASRS Board Representative Director, Retina Service University of Illinois at Chicago Chicago, Illinois



Alice T. Lyon, MD Director, Vitreoretinal Service and Vitreoretinal Fellowships Northwestern University Feinberg School of Medicine Chicago, Illinois



Pauline T. Merrill, MD Assistant Professor Department of Ophthalmology Rush University Medical Center Partner, Illinois Retina Associates

Camille Palma: What inspired you to create Women in Retina?

Jennifer Lim: A couple of years before WinR was officially formed, several industry partners had broached the idea of getting women retina specialists together. I remember an early event at the Association for Research in Vision and Ophthalmology (ARVO) where I was surprised not just by the number of women who attended, but by the range of topics discussed—from having kids to job promotions and salary disparities. I don't think those topics were ever openly discussed in a meeting like that before.

Nancy Holekamp: On several occasions, women in industry, specifically from Genentech, said, "We have support for our professional women colleagues from within our company." There were a lot of women in powerful roles at Genentech at the time, and they saw our potential, encouraged us, and inspired us.

Pauline Merrill: I remember a dinner meeting in Chicago. We had already had some discussions about starting a Women in Retina group, and our Genentech representative said she would be happy to facilitate an organizational meeting. That meeting was the beginning.

Julia Haller: I was unable to attend the original meeting in person, so I listened in via phone while all the other women were together in Chicago. I kept listening during the breaks, and was surprised to hear such energy and excitement—something I had never heard on another conference call.

I thought to myself, "There's a chemistry among women that is different-it's important, and it's feeding so many other things." Funny, sometimes from the horizon, you can see the landscape, and I was blown away by it.

'There's a chemistry among women that is different—it's important, and it's feeding so many other things.'

-Julia A. Haller, MD

Jennifer Lim: We have similar passions and ideas. When we gathered everybody in the same room, the group dynamic created something bigger than what any one of us alone could have imagined. It took the collective effort of all the founders to combine with Genentech support to recognize and form Women in Retina.

Then, of course, Julia Haller made the great suggestion to have it come under the umbrella of the ASRS, and that made it take off for all of us. It's been really exciting. We have accomplished a lot of things through the partnership of ASRS and WinR.

Pauline Merrill: While we are giving credit, we have to remember that at that first meeting when we decided we would call ourselves





Cynthia Toth receives the Retina Society Award of Merit, and delivers the Charles L. Schepens Lecture



Dimitra Skondra receives the Retina Society Raymond R. Margherio



Alice McPherson is the first woman to receive the International Council of Ophthalmology Gonin Medal



The Macula Society

2014 Anita Agarwal receives the Macula Society J. Donald Gass Medal



2015 Anat Loewenstein receives the Macula Society Arnall Patz Medal



WinR founders and members gathered at a luncheon at the 2015 ASRS Annual Meeting in Vienna, Austria. (I-r) Mina Chung, MD; Pauline Merrill, MD; Nancy Holekamp, MD; Alice Lyon, MD; Alexandra Kautzky-Willer, MD; Marion Munk, MD, PhD; Barbara Blodi, MD; Jennifer Lim, MD. Not pictured: Julia Haller, MD.

Women in Retina, Julia said, "Of course, we are all winners, W-I-N-R."

Camille Palma: Mentoring is a huge part of Women in Retina's mission and strength. How did you decide to incorporate mentoring as a key focus of WinR? Who were your mentors?

Nancy Holekamp: In the early days, our main industry sponsors were women at Genentech and Regeneron who were so excited that we had started WinR and enjoyed seeing our growth and development. They loved the involvement of professional women at our functions, such as the ASRS Annual Meeting luncheon and our Fluorescein Conference. After these meetings, they would say, "Let's do more."

At one point, we pulled out a napkin and started writing down ideas about a mentoring program that would have 4 touchpoints over the year with 4 specific missions. That napkin conversation has evolved into a multifaceted mentoring experience.

The Winter Brunch has a mentoring mission of helping fellows understand ethical and responsible interactions with industry. The ARVO case conference is a chance for WinRs to present their science and their research to a friendly crowd.

The Women in Ophthalmology (WIO) travel grants include women in the broader picture of WIO. The American Academy of Ophthalmology (AAO) travel grants allow

fellows to go to Subspecialty Day with a mentor and sit through 2 days with a senior person who puts it all in perspective for them.

Alice Lyon: Another important part of mentoring is supporting one another intellectually as retina specialists and bouncing ideas off of one another. The surgical and clinical discussions during these conferences were incredible. I think until we had WinR, we felt like we often weren't called on for our expertise, so this gave us a platform and a voice for us to support one another intellectually.

Julia Haller: Our first Fluorescein Conference was at ASRS in Hawaii in 2008. The women who presented were so excited and interested, and I found that extremely rewarding. It also gave me

'At one point, we pulled out a napkin and started writing down ideas about a mentoring program ... That napkin conversation has evolved into a multifaceted mentoring experience.'

-Nancy M. Holekamp, MD

insight into how much having a female-only opportunity can make a difference.

Pauline Merrill: I had wonderful mentors, most of whom were male, from medical school through fellowship with Mike Lambert. There were a few women mentors along the way, too. Cindy Toth had just arrived at Duke, and of course I looked up to Julia Haller, Jenny Lim, and Alice Lyon, even if they were only a little bit ahead of me.

Jennifer Lim: In the beginning of my career, most of my mentors were male. Once I got into residency, however, I was fortunate to have great female role models. My residency class was half women, and I had the mentorship of Dr. Eve Higginbotham.

During fellowship, I was blessed to have Julia Haller teach me how to operate, along with Drs. Peter Campochiaro, Susan Bressler, and Janet Sunness. I saw how they balanced work, life, and family issues.

Not until I was done with my training did I feel more isolated being female, because everywhere I went, I was surrounded by males. For me, mentoring became an important issue because a lot of younger women would come up to me and ask, "How did you balance your work with your family?"

Camille Palma: How have your careers been affected by the relationships you've formed through WinR?



Joan Miller receives the ARVO Weisenfeld Award



Jennifer Lim is first WinR representative voted onto the **ASRS Board**



Carol Shields receives the ASRS Founders' Award



Mary Elizabeth Hartnett gives the Macula Society Paul Henkind Memorial Lecture



Johanna M. Seddon receives the ARVO Weisenfeld Award



Irene H. Maumenee receives the AAO Laureate Recognition Award

Pauline Merrill: These relationships make the scientific meetings even more enjoyable and they facilitate exchange of ideas. Now that I've met groups of people I hadn't spent a lot of time with before, including international WinRs, big meetings feel smaller and more collegial.

Alice Lyon: WinR has opened up the door for all of us to meet younger ASRS members. We have grown bigger than our own circle of professional women to include trainees and younger women in practice, and it has been wonderful getting together at meetings.

Julia Haller: For me, it's almost like getting new sisters. WinR has given me an extra group of people with whom I have a special connection. No matter how infrequently we see one another, there's an instant rapport because we know we're passionate about the same things and we're in sync about our commitment to patient care, research, and education.

We are committed to pulling our sisters along with us, and I'm so grateful. I got involved in WinR by luck, and no matter where I go, when I see another WinR, it brightens my day.

Nancy Holekamp: It's hard to appreciate what you're missing. I think we started WinR not to solve any problems, but because we were encouraged to, and it was going to be an adventure.

Now, looking back after 10 years, I think we all appreciate how much we've gained—collegiality, support, sisterhood, the ability to make very large meetings smaller—and I think we've all personally and professionally benefitted from it.

We WinRs all help one another, and because we are familiar and have a shared mission, we readily reach out and support one another. We didn't

know we were missing that, but looking back, we can see and appreciate the benefits.

Camille Palma: What advice do you have for young WinRs who are just joining the organization?

Nancy Holekamp: Jump in with both feet! Have fun, enjoy your profession, your colleagues, meetings, and helping others.

Jennifer Lim: Reach forward to the people ahead of you. Reach back to the people following you. Network with everybody and offer all you have.

Pauline Merrill: Take advantage of all networking opportunities that come your way. WinR should be one of many—there are other ASRS member sections as well as opportunities in practice, during training, and in academics. Don't miss a chance to network and connect.

Alice Lyon: Our profession, our personal relationships, and the communities we have created have brought us together. We're lucky to have multifaceted lives; we've made a lot of hard choices for the right reasons, and now we get to enjoy the fruits of what we've done and pass that on to everybody else.

Julia Haller: Be intentional and deliberate about looking at the accumulating evidence about where women fall behind. Realize that you need a seat at the table. You need to raise your hand, to be aware you're up against societal barriers.

Push yourself, make changes, and get beyond your comfort zone. We as women tend to underestimate ourselves, to undervalue our accomplishments. Any woman in retina is incredible. She's gotten into college, into medical school, into ophthalmology—one of the

hardest residencies in which to get a place in all of medicine—and then gotten a fellowship in retina, so she's unbelievably accomplished, and she needs to give herself credit for that.

Camille Palma: The interview concluded with an energy, or shall we say WinR-gy (thank you, Julia), that I can only guess was similar to the first meeting of this incredible group of women. Their enthusiasm and passion are palpable, and the future of Women in Retina will continue to honor those intentions.

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Dr. Palma - None.

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Joan Miller receives the Charles L. Schepens/ American Academy of Ophthalmology Award



The Macula Society

Ursula Schmidt-Erfurth receives the Macula Society J. Donald Gass Medal



2018
Cynthia Toth
gives the
Macula Society
Paul Henkind
Memorial Lecture



Anat Loewenstein receives the Michaelson Macula Society Award



Mary Elizabeth
Hartnett receives
the ARVO
Weisenfeld Award



Joan Miller receives the ASRS Pyron Award





Alice T. Lyon, MD ASRS WinR Co-founder Director, Vitreoretinal Service and Vitreoretinal Fellowships Northwestern University Feinberg School of Medicine Chicago, Illinois



Women Retina Leaders— **Pearls From Our Pioneers**







"None of us can know what we are capable of until we are tested," said Elizabeth Blackwell, MD, who in 1849 became the first woman in the United States to graduate from medical school. Her words no doubt resonate with every retina specialist—but none more so than the women pioneers in our subspecialty.

Panelists



Susanne Binder, MD Professor of Ophthalmology Sigmund Freud University Vienna, Austria Adjunct Professor of Ophthalmology Weill Cornell Medical College New York, New York

Susan B. Bressler, MD

Julia G. Levy, PhD, Professor

of Ophthalmology

Wilmer Eye Institute

School of Medicine

Baltimore, Maryland

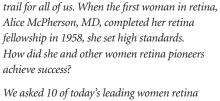
Johns Honkins University



Judith T. Feigon, MD, PA



Anat Loewenstein, MD Director, Division of Ophthalmology Tel Aviv Medical Center Vice Dean, Sackler Faculty of Medicine Tel Aviv University



We owe these women homage; they blazed the

specialists—5 from the United States and 5 from other countries around the world—about the challenges and rewards of entering a maledominated specialty, the mentors who helped guide their careers, and their advice for women today. Here's what they said.



Usha Chakravarthy, MD, PhD, CBE Professor of Ophthalmology and Vision Sciences Queen's University Belfast Ophthalmology Consultant Belfast Health and Social Care Trust Belfast, United Kingdom



Joan W. Miller, MD David Glendenning Cogan Professor and Chair of Ophthalmology Harvard Medical School Chief of Ophthalmology Massachusetts Eye and Ear and Massachusetts General Hospital Boston, Massachusetts



The common denominator is curiosity: these women retina pioneers, like many of us, wereand are—drawn to the challenges, intricacy, and the ever-changing nature of retinal diseases and surgery. These women are intensely inquisitive, self-motivated, energetic, and driven by variability and differences.



Emily Y. Chew, MD Director, Division of Epidemiology and Clinical Applications Deputy Clinical Director National Eye Institute Bethesda, Maryland



Ursula Schmidt-Erfurth, MD Professor and Chair Department of Ophthalmology Director Christian Doppler Laboratory for Ophthalmic Image Analysis (OPTIMA) Scientific Director Vienna Reading Center Medical University Vienna Vienna, Austria

Some of the international women chose US retina training when their own countries did not offer women opportunities.



Young Hee Yoon, MD, PhD Professor of Ophthalmology Asan Medical Center University of Ulsan Seoul, South Korea

Susanne Binder: I decided on retina because it is most interesting—the brain-tissue of the eye. My kind mentor, Professor Wolfgang Funder at the First University Eye Clinic in Vienna, was the father of 4 daughters; he supported me when I wanted to learn microsurgery. But in 1974, women were not allowed to do surgery on their own in Vienna; they could only assist the surgery of their male colleagues.

Later, I went to Johns Hopkins and Duke Eye Center, where Drs. Ron Michels and Robert Machemer taught me everything about vitreous surgery. Coming back to Austria, I had less resistance at the clinic.



Janet L. Davis, MD Leach Chair in Ophthalmology Professor of Ophthalmology Bascom Palmer Eye Institute University of Miami Miller School of Medicine Miami, Florida

'In 1974, women were not allowed to do surgery on their own in Vienna; they could only assist the surgery of their male colleagues.'

-Susanne Binder, MD







WinR Chair Nancy Holekamp, MD, and Susan Bressler, MD

Joan Miller, MD

Anat Loewenstein, MD

Young Hee Yoon: When I became an ophthalmology resident at Seoul National University Hospital in South Korea in 1982, it was very difficult for a woman to get selected. In 1980, they officially announced they would accept 1 woman out of 3 physicians every other year. So, we had 2 women out of 12 residents in the program.

There were no fellowship-trained retina specialists in Korea; I think that frustration was the key driver in my decision to go abroad to pursue formal training.

My most influential mentor was Dr. Stephen Ryan at Doheny Eye Institute during my clinical fellowship in 1992-1993, and afterward. I was his first international clinical fellow. He taught me how to become a leader in the field.

In the US, a growing number of women were attracted to retina by the many opportunities it offered.

Susan Bressler: I chose to work on age-related macular degeneration (AMD), a disease for which nobody could do anything for patients at the time—and which therefore had a wealth of opportunity. I was inspired by my ophthalmology mentor, Dr. Stuart Fine, to enter the exciting field of clinical trials. In those days, medical retina was the "forgotten child" of our subspecialty.

'There were no fellowship-trained retina specialists in Korea ...'

-Young Hee Yoon, MD

Joan Miller: I was attracted to ophthalmology because of the opportunity to provide both medical and surgical care, and to treat patients of all ages. Retina surgery appealed to me because you often have to problem-solve in

the operating room. Cataract surgery seemed to demand precise, consistent, repetitive steps; retina surgery, by contrast, seemed more creative and demanding in the moment.

'Some leaders are born women.'

-Geraldine Ferraro

First female US vice presidential candidate

And retina offered the greatest opportunity to develop therapies for diseases that cause devastating vision loss and lacked good options: AMD, diabetic retinopathy, and retinal degenerations.

Thanks to these pioneers, medical retina flourishes today and offers many treatments. Indeed, neovascular AMD patients often recover vision with treatment. Anat Loewenstein was prescient, stating, "I figured retina is the field that would have most of the innovations in the coming years."

Who were your mentors?

All of the women interviewed credit wonderful, kind people with mentoring them. These were men initially, who welcomed them as students, and then as colleagues and collaborators. Female retina mentors did not exist for Alice McPherson in the 1950s, and were few even in the 1990s.

Still, many shared fond memories of their training. Alice McPherson expressed heartfelt gratitude to Dr. Charles Schepens—the first retina specialist ever to accept a woman trainee. Dr. McPherson became the first of many women in retina whom Dr. Schepens specifically selected—and she went on to become a mentor to many others.

Judith Feigon: I went to see Dr. McPherson in 1980 and asked if she'd accept me for the retina fellowship. She agreed, with the stipulation that I would be the first 2-year rather than 18-month fellow. Dr. McPherson also said I was the first woman she had accepted!

Dr. Bob Butner taught me how to examine and draw retinas as a second-year resident. He has been an inspiring mentor and a good friend since I started my fellowship.

Janet Davis: When I convinced Dr. David Parke I was committed to retina, he told me I should train in uveitis, too and become a specialist in posterior-segment inflammations and infections. He and Dr. Danny Jones then worked to set up my 2 fellowships, one at Bascom Palmer and the other at National Eye Institute with Dr. Bob Nussenblatt. These are my true mentors; without their help, I don't believe I would have had this career trajectory.

Joan Miller: I have had wonderful mentors, including Drs. Evan Gragoudas, Ephraim Friedman, and Judah Folkman, who welcomed me as a professional colleague and expected the same hard work and dedication, regardless of gender. They gave me great advice about believing in myself, pursuing my dreams, and building a robust network of colleagues, friends, and family. I couldn't be more grateful.

Others credit women scientists as mentors.

Emily Chew: My mentor was a dynamic woman who was conducting retinoblastoma research. She impressed upon me the importance of research, and she made the retina look like the most important organ in the body. Most of all, she loved her work.

When I was a resident, the retina appealed most to me; I like chronic diseases such as diabetic retinopathy, as I came from an internal medical background. I also liked that fact that we could treat these patients for a long time and develop relationships with them. My mentors during my fellowship cemented my love for retinal work and for the importance of research.

Ursula Schmidt-Erfurth: Mentors for young female professionals were sparse 20 years ago. There was, however, a role model—a friend of our family—who personified intelligence,

integrity, and independence, and she happened to be an eye doctor.

And sometimes, mentorship begins at home.

Anat Loewenstein: My first mentor was my mother, Dr. Esther Shapira, who was a cardiologist and worked until the day she passed at the age of 89. She taught me that practicing medicine and making a change for patients is the most important thing, and the thing that gives the best fulfillment. I still think about my mother every day.

My second mentor was Dr. Susan Bressler, who taught me meticulousness in treating retina patients, and that there is a possibility for wonderful balance between career and family.

My third mentor was Dr. Julia Haller, who taught me vitreoretinal surgery, and that it is possible to treat patients in the best possible way and in the most difficult situations, while maintaining a sense of humor and being friendly.

My fourth mentor was Dr. Eugene de Juan, who taught me to keep an open mind, to think outside the box, and to think "big" with vision.

'My first mentor was my mother, Dr. Esther Shapira, who was a cardiologist and worked until the day she passed at the age of 89.'

-Anat Loewenstein, MD

Throughout our careers, we will meet mentors, whether we connect personally or we admire them from afar. Our women retina pioneers expressed their gratitude for kind mentors who offered guidance and opened doors for them.

Susan Bressler: I credit Risa Mann, MD, one of very few female professors at Johns Hopkins University Medical School when I was a medical student; I was fortunate to have her assigned as my advisor throughout medical school. She demonstrated to me how a woman could become a successful academic physician and attempt to "have it all." Although she was a pathologist, her lessons crossed all disciplines.

Half of our panelists had no female mentors; they stuck to their convictions and goals, and forged ahead in their careers. These women in retina, in turn, have created opportunities for learning and contributing as mentors for students passionate about retina, including women and men, who "followed" them well before Instagram! Our WinR trainees today are fortunate to have female retina role models and mentors.

Joan Miller: The percentage of women retina specialists has climbed steadily since I joined the field. When I was a young attending, I asked Dr. Alice McPherson what it was like to be the first woman in retina, and even though Alice was often the only woman in any group—whether it was the Retina Society, the Club Jules Gonin, or a board meeting—she was very clear that she paid it absolutely NO attention.

I believe we can learn a great deal from Alice. My generation of female retina specialists coped with potential bias and exclusivity by expecting to be treated as "one of the boys," but I never felt that an opportunity was withheld, or a different standard was used in my professional journey.

What career challenges have you encountered?

Emily Chew: We were aware that certain bonuses were given to the physicians as part of their pay as federal employees in the late 1980s. The maximum bonus of approximately \$19,000 was given to the men immediately at their hiring, while we women were given less than \$2000. We discovered this years later, thanks to an institute-wide investigation subsequently published in *Science*, noting the huge disparity in our salaries. Since then, there have been changes in these bonuses. However, there are still gender-based salary differences that need to be addressed.

We also have to be aware that resource allocation may differ by gender. Nancy Hopkins from MIT did an extensive study that found significant differences not only in the salaries, but resources given to women vs men in research. We need to continue to be vigilant in assessing the equality of the playing field of the work environment for men and women.

Young Hee Yoon: When I returned to Korea in 1993, I faced a gender-based barrier to becoming a faculty member in an academic institution. Seoul National University Hospital had almost all male faculty members, except a few in pathology and pediatrics. I was fortunate to be recruited by Asan Medical Center, affiliated with Ulsan University Medical School. Although Ulsan University is a new private university, Asan Medical Center is now the biggest and best medical center in Korea.

In my institution, I got full support from my hospital president in many ways. Although I was the first and only retina specialist in 1993,

now my retina division has 4 professors and 4 fellows. I served as chairman for 6 years—the maximum term.

In the Korean Retina Society (KRS), on the other hand, I was treated differently. I became the first female member of KRS in 1993; now we have 65 women out of 340 members. I am very proud of being able to encourage many smart female residents to choose retina as their subspecialty. Most of them kindly told me that I was their role model.

'The maximum bonus of approximately \$19,000 was given to the men immediately at their hiring, while we women were given less than \$2000.'

-Emily Chew, MD

Ursula Schmidt-Erfurth: There is less bias in research and more bias on the surgical side. My first chairman told me there was "no need" for me to do a fellowship in the United States, as I "was already married." The German Research Foundation withdrew 50% of my fellowship funding, as my partner also had an independent grant.

Has the attitude changed over the years? In some groups and professional societies, very much, such as the Macula Society. Surprisingly, the young generation appears not to keep up with the evolution, as seen in the recent introduction of an international imaging society with an extensively male board.

'My first chairman told me there was "no need" for me to do a fellowship in the United States, as I "was already married."

-Ursula Schmidt-Erfurth, MD

Janet Davis: There is gender bias everywhere. Some of it is convenient, such as my not needing to wear a name badge for the first 5 years at national retina meetings because so few women attended. Now there are so many that even the women need to identify each other

with name badges. I was amazed by the last WinR luncheon I attended.

Gender bias and workplace inequality were common in the early days; women retina specialists found that lower pay and lack of inclusion in many facets of their careers, particularly in leadership positions, were ubiquitous.

Fortunately, the tide has turned and women now comprise almost half of the retina fellowship trainees. Women are also holding more leadership positions in our field. As these issues clearly exist in 2018, some were more egregious in these earlier days of women in retina.

Balancing family life and career demands also figured prominently—as explored in greater depth on page 14.

'Some [gender bias] is convenient, such as my not needing to wear a name badge for the first 5 years at national retina meetings because so few women attended.'

-Janet Davis, MD

Joan Miller: The biggest challenge to me as a woman retina surgeon was in balancing the demands on my time: emergency surgery, clinical care, supervising research and clinical trainees, writing, raising a family, and being a supportive wife to a husband who also had a demanding professional career.

Peers or mentors who did not have children—or who had spouses who provided the "in-home" support—may not have had the same demands I experienced. But I tried to stay focused on what I was trying to do rather than worry about whether it was tougher for me than it may have been for others.

I have since come to realize that one never truly comprehends the struggles that another person faces, and that comparing oneself to others is not helpful.

I have become more aware of gender issues experienced by others since moving into a leadership role as chief and chair of a large ophthalmology department with an accompanying hospital management role. As a leader and—I hope— role model, I am more sensitive to the challenges and stresses on young people in academic medicine. However, I firmly believe

we are making real progress in creating more supportive environments and opportunities for growth and equality in medicine.

Our common desire to be successful, both professionally and personally, demands constant attention and commitment to family for women in retina—definitely more than in other fields in ophthalmology. These personal relationships also bring the most vital personal sense of accomplishment and happiness. Mentors have been instrumental in helping women retina specialists navigate the work aspect of key personal issues we face.

Susan Bressler: Early on, there were no set maternity or family medical leave policies. I recall how Dr. Claes Dohlman helped forge these new paths for me, my spouse (who was simultaneously affected), and others who followed us. We will all face hurdles, such as being unprepared for dealing with family illnesses, deaths, and other adversities.

The woman who worked hard, in everything, and who shared her talents in the research lab as well as the operating room, all while juggling her professional career and her family life, proved she could succeed. She flourished and earned the respect and "ultimate rewards"—department chair, partner, section director—plus the adventures of motherhood and partnership along the way. This is true for many of us as women in retina, and is one of the most important bonds we share. This is how WinR started, and it will be our legacy.

To what do you attribute your success?

Janet Davis: I've been a member of the "We Never Guess, We Look It Up Club" since age 9. Also, if no one else will do a task, then I will. I am not sure that club has a name—I would propose "The Little Red Hen Club." There are real advantages to taking control over both your knowledge and your actions.

Usha Chakravarthy: Professional success is built on hard work and perseverance, but networking and being presented with opportu-

'I have ... come to realize that one never truly comprehends the struggles that another person faces, and that comparing oneself to others is not helpful.'

-Joan Miller, MD

'Early on, there were no set maternity or family medical leave policies. I recall how Dr. Claes Dohlman helped forge these new paths ... '

-Susan B. Bressler, MD

nities also play a role. I had immense support from my colleagues, male and female, and I was given protected time to undertake my research.

Obtaining grant funding, leading projects, and publishing outputs in the 1990s were particularly challenging. However, I was held to the same standards as men; there was no discrimination. Professional standards should be applied uniformly, and this is indeed the case in the United Kingdom.

Judith Feigon: I feel I've always been held to a higher standard than men. My older brother is a retired psychiatrist who was first in his class in med school. My father came to the United States as a child, and my mother's parents were immigrants; after family and community, education was key. My father always said he'd educate his children "to the max."

Anat Loewenstein: I attribute my success mainly to perseverance and hard work, to not giving up, to striving always to become the best.

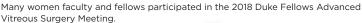
Emily Chew: Success is not always defined uniformly. I believe we all hope to achieve our own personal goals and meet the expectations of our institution or practice. Obviously, this will be different for everyone.

I have had wonderful colleagues and my mentors have played important roles in guiding and supporting me for a satisfying, enjoyable, rewarding, journey. I have a great family who keeps me grounded.

Women in general are required to work much harder to be recognized for their efforts. My friends in other fields have the same opinion. But I am very optimistic that the future generations are changing because of the very forward-looking young men and women who have much fewer gender biases.

Joan Miller: I attribute my success to curiosity, hard work, and persistence. Working as a health care provider is still a wonderful career; you can go to work and actually help other people and be paid for it. Ophthalmology, and











Young Hee Yoon, MD

'Professional success is built on hard work and perseverance, but networking and being presented with opportunities also play a role.'

-Usha Chakravarthy, MD

retina in particular, is a spectacular profession because one gets to practice medicine and surgery on the same organ.

As Donald D'Amico, MD, liked to point out when we met with neurosurgeons, vitreoretinal surgery is the most difficult and demanding surgery in the human body. Where else do you manipulate tissue that most people can't even see! How cool is it to show a show a resident the reattachment of a giant retina tear with perfluoro-N-octane and draw them away from the cornea subspecialty to retina fellowship! (Sorry, Dr. Dohlman.)

Lastly, the clinician-scientist track has been especially gratifying for me because I have been able to problem-solve and develop therapies for patients I saw clinically and for whom, at the beginning, there was very little to offer.

Young Hee Yoon: I am fortunate to have received superb clinical retina fellowship training at Doheny Eye Institute under Drs. Richard Ober and Larry Chong. With that background, I was able to build my own retina division at the biggest hospital in Korea. To my surprise, I did not experience any significant resistance from my patients because I was woman.

I have conducted over 12,000 vitreoretinal surgical procedures and trained over 50 fellows, and I am still one of the busiest retina surgeons in Korea. Sometimes I do benefit from being a woman. Patients and other hospital members

seemed to respect me more, assuming that I had spent more time and effort to reach this level than my male colleagues.

Ursula Schmidt-Erfruth: I attribute my success to a genuine interest in understanding the retina and retinal disease, and the motivation and endurance that emanate from this impulse. I like to believe that this is the source of all true personal and professional success and the value of investing life energy and lifetime into any task.

There are no fair standards that apply to everyone in the overall society, nor for men or woman, different social classes etc. Individuals who are more driven than the average person will find competitiveness, and will have to handle it appropriately.

'I feel I've always been held to a higher standard than men.'

-Judith Feigon, MD

What advice would you give to young women in retina?

Susanne Binder: If you know what you want, you can achieve it. Do not give up on your dreams, and learn to forgive yourself if you are not 100% perfect. I think I fought too many unnecessary fights when I was young. I am much more relaxed now, and I focus more on things that matter.

Usha Charkavarthy: Aim for the best and the highest regardless of your specialty interest.

Emily Chew: Be prepared, be collaborative, be flexible, be curious. Stay strong, stand up for your beliefs, and do not buckle under pressure. Always follow through on projects. Take action; don't just talk. Be a good mentor; give generously of your time and your brain power.

Janet Davis: You are probably going to have to do better work than a man to succeed, and

you are probably going to make less money doing it. This is okay if you are not looking for an easy job that is overpaid.

Also, if you going to wear scrubs outside the OR, make sure they are really nice scrubs. You can look like a surgeon without being a slob. Tie your hair back. This is a procedural specialty.

Anat Lowenstein: Establish goals and negotiate to achieve them, both with bosses and families.

Joan Miller: Be conscious about your choices and make value judgments on how you spend your time. Time, in the end, is the only resource we control.

Ursula Schmidt-Erfurth: Identify your individual interests and talents and set your personal priorities. If you want to succeed, you will need a lot of motivation and endurance, which you will be able to mobilize only if you feel great satisfaction in what you do.

Susan Bressler: Partnership is essential. My partner happens to be my husband, Neil, but I don't think a partner and a collaborator need to be one and the same. My advice is to form a close, symbiotic work relationship with somebody to develop ideas and programs, to critique one another in an honest, open way, and to keep each other intellectually sharp.

You have to be able to communicate your ideas, and having a collaborative partnership forces you to develop and enhance this skill. I also recommend surrounding yourself with bright, hard-working people, including those who may be in other areas but still complement your areas of interest. Keep an open mind to continue learning from these opportunities.

'Time, in the end, is the only resource we control.'

—Joan Miller, MD

In your personal life, figure out the things that can be managed by or delegated to someone else. Try to lighten your household manager role so you can maximize the time you spend with your family and on your work, and to permit that time to be devoted to high-quality, value-added activities.

For today's professional woman with a young family, it is very hard to "shut off." A generation ago, we didn't have certain challenges that are omnipresent today—cell phones, internet, email—and the workday didn't necessarily operate 24/7. It was easier back then to say to yourself, "I'm going to unplug; I'm going to go home and be dedicated to my family for several hours without distraction, and then if I want to start working a few hours later, that is my choice."

Other factors young professionals are increasingly faced with are the overscheduling of children, the growing tendency to live far away from our extended families, and the trend toward starting families at an older age. Many adults today are sandwiched between caring for children and for their own aging parents.

What was your most memorable moment in retina?

Susanne Binder: My most memorable moment was when I became chair of a big eye department in 1995. Now, 60% of my physician staff is female, and they all do surgery!

Usha Chakravarthy: It is hard to select a most memorable moment, but being honored with a Commander of the Most Excellent Order of the British Empire (CBE)—a national award for the United Kingdom—in 2017 was a defining moment, as this was a recognition of my work in the field of retina.

Emily Chew: I have had many memorable moments, but I especially enjoy seeing our young trainees achieve success.

Judith Feigon: What's memorable? A man who was finger counting when he first came 2 years ago came in the other day at 20/50 after Avastin and Eylea. That happens very often in this work. And I remember when [Society co-founder] Roy Levit invited me to join the Vitreous Society in 1984. It was a very big deal!

'I have had many memorable moments, but I especially enjoy seeing our young trainees achieve success.'

-Emily Y. Chew, MD



Susanne Binder, MD

Anat Loewenstein: My most memorable moment was when I became department chair; I was the first woman in my hospital to chair a surgical department, and when I got my professor's degree at a relatively young age.

Joan Miller: I have had many enjoyable and memorable moments as a woman in retina. It was very exciting to work with Dr. Evan Gragoudas and others to develop photodynamic therapy (PDT), the first pharmacologic therapy for neovascular AMD. We worked on PDT in the laboratory from the first patient treated to successful clinical trials—and ultimately approval and adoption around the world.

Then it was even more fun to help lead the team, with Drs. Tony Adamis, Pat D'Amore, and Evan Gragoudas, that identified the role of VEGF in ocular neovascularization, and to work on developing therapies based on VEGF inhibition to replace and improve on photodynamic therapy.

Ursula Schmidt-Erfurth: I will always remember the support I received from brilliant experts in the field for obtaining the Donald Gass Medal of the Macula Society as a European female researcher.

Young Hee Yoon: A memorable moment was in 2007, when I first joined WinR in Palm Springs at the ASRS Annual Meeting. I used to think that, unlike in Korea, there must not be gender bias in the United States, but I could sense that it was there. And I was also impressed that many male colleagues were supporting WinR.

Indeed, every pioneer we interviewed mentioned the importance of WinR. Dr. Davis feels WinR is a great way for us to meet one another. She stated, "There is a critical mass when a group stops being a minority."

Given the chance, is there anything in your retina career you would do differently?

The overwhelming answer was "no." Each woman has made her choices and is living her dream. One person did regret that she did not stay in academic practice. They all reflected that it is important to recognize that not everything is perfect, and women in retina do need to embrace this understanding.

These women in retina exude a positive, forward-looking, strong, and adventurous perspective that serves them well. Through each individual's intellectual brilliance, curiosity, tenacity, cooperative nature and leadership, each has set the greatest goals and standards for herself and for future generation of women to succeed in our field.

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The Women in Retina (WinR) Section provides a network of peers for all female ASRS members. Automatic inclusion in the Section is provided for all female ASRS members; however, membership in WinR is open to all members.





Manjot K. Gill, MD Associate Professor of Ophthalmology Northwestern University Feinberg School of Medicine Chicago, Illinois



Managing the Issues Facing Women Retina Specialists

In the past year, more focus than ever has been put on us as women: our rights, our voices, our ambitions and struggles. Female retina specialists often face unique issues—particularly in establishing ourselves in our careers while trying to achieve a balance in our professional and home lives.

Panelists



Sophie J. Bakri, MD Professor of Ophthalmology Mayo Clinic Rochester, Minnesota



Susan B. Bressler, MD Julia G. Levy, PhD, Professor of Ophthalmology Wilmer Eye Institute Johns Hopkins University School of Medicine



Carol L. Shields, MD
Professor of Ophthalmology
Thomas Jefferson University
Director, Ocular
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Wills Eye Hospital
Philadelphia. Pennsylvania

Manjot Gill: Can you describe some career hurdles you have had to overcome?

Carol Shields: I've had to navigate a few challenges in medicine, and specifically retina, centered mostly on the overwhelming predominance of males back in the 1980s when I entered. This did not frustrate or scare me; I had quite a bit of experience working with males, having grown up with 5 brothers and later attending the University of Notre Dame when there was a male-to-female ratio of 5:1.

However, in medicine, it was a bit more challenging, as there were skills to be gained and trust to be earned. I simply focused on topic and gave it my best. Now, with more women in retina, there is greater support for both female and male newcomers.

Susan Bressler: In my generation, there were few role models, and I am grateful for those I had, most notably Gisele Soubranne, MD, in Paris. There were so few US women in retina that most organizations were unprepared to understand the strengths that women could add to their programs and the best means of dealing with the unique challenges that women face, such as child rearing.

In the last several decades, many more women have been entering the field, providing greater strength in numbers, but some trails need to be "blazed" over and over. Progress is slowly being made.

Sophie Bakri: Looking through the "retrospectoscope," I don't see the challenges as hurdles. They're part of life. There are challenges, and sometimes things don't go according to plan. I expect that.

When I look back and advise younger people, I tell them not to worry, because when one door closes, another opens. I've learned to go with the flow, and if something doesn't work out as

expected, I try my best to make it work—but I realize there are many other options that will work out great in the long term.

'Looking through the "retrospectoscope," I don't see the challenges as hurdles. They're part of life.'

-Sophie J. Bakri, MD

Manjot Gill: Managing work/home balance is a constant struggle for women in all fields. How have you been able to navigate this through various stages in your professional and family life?

Carol Shields: I agree this is a major concern for new parents in the field of medicine, especially with careers involving potential emergencies and long hours. My husband, Jerry, and I have always worked as a team. We initially used a daycare facility near the hospital, but as our family grew, we employed 2 in-house nannies to run the home front.

One of us tried to do research work from home each Tuesday and Friday whenever possible. Our children entered formal half-day education at a Montessori school at age 18 months; later, this was extended to full day. We also started office hours very early while the children were asleep so we finished early and were often able to pick them up from school.

We had dinner together as a family every night. I believe this is important for family bonding.

Susan Bressler: The greatest asset can be your partner, provided it is a healthy union.

Equally sharing all responsibilities and burdens—work, money, home, child care, and elder care—is critical. But this is equally beneficial for the partner, who may derive the same pleasure in participating in home life as women are thought to experience.

Few of us likely think we have found the balance. From day to day, one aspect of our lives seems to be the winner—while the next day, it's some completely different component and yesterday's winner is back at the bottom again. It is a never-ending juggle; you just pray that all the balls don't crash down at once!

Sophie Bakri: The first key is to know what you want in terms of work/home balance. The balance is different for each person; it depends on many factors and can change over time. Once you have figured that out, the key is to be organized to make that balance happen.

For example, there are many child care options—always go for the most reliable and safe option where the children will be happy and stimulated. Peace of mind as a working parent is very important. When the children are young, try to find the most-inclusive options—for example, schools that offer beforeor after-school programs or clubs.

When your children are young, many extracurricular activities like sports can be done on weekends, when you are available to take them to games or practices. Sometimes, our work involves travel and it is important to have a supportive network (eg, spouse, partner, family) to be around for the children. It is also essential to have a backup plan in case you have a sick child, especially during the winter months. Consider outsourcing any domestic tasks that take away from your time with your children when you are home.

Manjot Gill: What advice would you give to your younger colleagues or your own daughters?

Carol Shields: Anything is possible. You need to define your priorities, such as how much time you want at work, at meetings, and at home. When you are working, you must perform well and efficiently to earn your colleagues' respect.

You will be happier if you keep your work and home life simple and don't try to do it all. Do not overcommit to late-afternoon committee meetings, evening conference calls, or weekend interviews.

Home time should be for family; protect that precious time. It is acceptable to say, "No thanks, I am with my children" at that time. When at home, you are "Mom" and when at work, you

are "Doctor." Enjoy every step of your child's development.

'Home time should be for family; protect that precious time.'

-Carol L. Shields, MD

Susan Bressler: Don't let it all go by and forget to live and enjoy life. Our careers are only one part of who we are, as is true for all our colleagues.

Invest yourself wisely in those other aspects of life; apply the same discipline and commitment that you did to your education and training. What often needs to be sacrificed is sleep, so be glad that women seem to need less than men, especially as they grow older.

Sophie Bakri: When my children tell me "I can't," I tell them there's no such thing—they need to try, and keep trying. I believe in letting them work it out rather than intervening and doing it for them. I think teaching my children stamina, persistence, and "grit" is important and will help them in the long term.

When it comes to my younger colleagues, I would advise them to have a plan, have a schedule, and arrange for help. It requires a lot of organization to have a successful work, personal, and family life, but it can be done.

Manjot Gill: Is there anything you would have changed or done differently?

Carol Shields: I would not change anything; I am satisfied with how my career has evolved. Early on, I worked efficiently in the clinic and in surgery and participated in research activities—but only during office time. My home time was busy with children, meals, cleaning, homework, school activities, birthday parties, and more.

When my children were young, I did not travel much to meetings, as that involved too much time away from my family. As the children grew up, I traveled more and participated more in leadership positions.

I thank all my retina colleagues who trusted me with their patients, and I especially thank my work colleagues who shared responsibilities with me. Finally, I thank my partner, Jerry Shields, who supported my career and family choices along the way.

Susan Bressler: Hard as it sounds, I would have had another child, found Mary Poppins

from day 1 of motherhood and done everything to retain her, and been nicer to my mother and sister.

Help at home, whether from other family members or employees, is so important. Being able to delegate more mundane, but essential tasks—food shopping and preparation, laundry, banking, house repairs—lets us preserve our elective time for highest-yield professional and personal activities. There is also a lot to be said about having emergency back-up and support.

'What often needs to be sacrificed is sleep, so be glad that women seem to need less than men, especially as they grow older.'

-Susan B. Bressler, MD

Sophie Bakri: I'm fortunate to be very happy where I am in life, work, and the "balance" between them. I wouldn't change anything!

Manjot Gill: I want to acknowledge our esteemed panel for their thoughtful and honest responses. We are fortunate to have these women as role models and to draw upon their experience and wisdom to forge our own paths.

Ultimately, the struggles facing women in retina are similar to those in other fields, both in and outside of medicine. However, with a growing number of women pursuing careers in retina, we hope that fewer barriers exist and that women have a chance to attain a rewarding work/life balance.

At times, this concept of work/life balance may seem an elusive ideal, but by making deliberate choices about which opportunities to pursue and when to pursue them, our panelists have demonstrated that it is possible to engage meaningfully with work, family, and community.

<u>Financial Disclosures</u>

Dr. Bakri - ALLERGAN, INC: Advisory Board, Honoraria; CARL ZEISS MEDITEC: Advisory Board, Honoraria; GENENTECH, INC: Advisory Board, Honoraria; NOVARTIS PHARMACEUTICALS CORPORATION: Advisory Board, Honoraria.

Dr. Bressler - BAYER HEALTHCARE PHARMACEUTICALS: Investigator, Grants; BOEHRINGER INGELHEIM: Investigator, Grants; GENENTECH-ROCHE: Investigator, Grants; MERCK & CO, INC: Investigator, Grants; NOTAL VISION: Investigator, Grants; NOTAL VISION: Investigator, Grants; NOTAL VISION: Investigator, Grants; SPARK THERAPEUTICS INC: Investigator, Grants.

Dr. Gill - None.

Dr. Shields – AURA BIOSCIENCES, INC: Advisory Board, Honoraria.

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Medical Retina Fellowships: A Growing Career Option

The last decade has seen many advances in medical retina. Widespread use of anti-VEGF alone has dramatically changed the way many ophthalmologists practice. However, medical retina is still relatively young. We spoke with one of its earliest pioneers, Lee Jampol, MD, on the history of the field.



Northwestern University Medical Retina Fellowship Program Fellow Ria Desai, MD; Professor Lee Jampol, MD; and Associate Professor Rukhsana Mirza, MD.

Dr. Jampol began his career, like many of the early medical retina specialists, as a retinal surgeon who discovered that his greatest interests were in clinic, rather than in the operating room. He credits Drs. Donald Gass, Morton Goldberg, Lawrence Yannuzzi, Howard Schatz, Lloyd Paul Aiello, and Matthew Davis, as key physicians who developed the field.

Dr. Jampol cites the concept of angiogenesis, the development of novel imaging modalities, and the creation of large multicenter clinical trials as major influences that have further transformed the field in recent years.

He also created one of the first US medical retina fellowships. What prompted Dr. Jampol to start a fellowship at Northwestern University in the early 1980s? "As imaging and diagnostic capabilities improved, I developed a large medical retina practice," he recalls. "I had all of these great patients to teach with, so I started a medical fellowship ... almost simultaneously with our surgical fellowship."

According to Tim Losch of SF Match, the number of medical retina fellowships has more than doubled, from 13 to 27, in the past 5 years alone.

While some women's experience has been entirely positive, many physicians recognize that in prior decades, there were biases against training female physicians. At Northwestern University, we recognize Dr. Jampol for not only training numerous women in residencies and fellowships, but also for supporting the creation of what is now an entirely female retina service, with the exception of himself, at present.

"I have always picked people by their abilities, not by gender," Dr. Jampol explains. "In the 1980s, there was a strong bias against women in medicine. By choosing candidates based solely on their qualifications, I found that I got better-quality trainees."

Rukhsana Mirza, MD, associate professor of ophthalmology and associate program director of the vitreoretinal fellowships at Northwestern University, reflects on the climate of medical retina a decade ago. "I was motivated to pursue medical retina due to the rapid change in ocular imaging and potential treatments," she recalls.

"Early anti-VEGF agents became available during my final year of residency. Knowing this would revolutionize the way we treated macular degeneration, I pursued my fellowship in 2005," says Dr. Mirza. "Many questioned my pursuit of a field charged with managing patients with 'bad vision.' However, in 2006, the MARINA trial showed the effect of an anti-VEGF agent on exudative AMD—setting a new standard and giving a far different prognosis for a disease process previously thought to be hopeless and unfulfilling to treat.

"Since my training, new trials and imaging modalities have furthered our understanding and treatment of retinal disease," Dr. Mirza adds. "Now, more than ever, medical retina has transformed into a career where physicians can maintain functional vision in many patients who once were told vision loss was inevitable."

Why would today's resident choose medical retina as a career? "As a resident, I was immediately drawn to medical retina," recalls Ria Desai, MD, the medical retina fellow at Northwestern University. "Every medical retina patient is a puzzle you must decipher with your clinical skills and your understanding of imaging results.

"Now that we have efficacious treatments for common retinal diseases such as diabetic retinopathy and macular degeneration, the next step will be to understand how and why common disease manifestation can vary among patients," says Dr. Desai. "Future goals will include further characterizing disease processes and tailoring discussions and treatments to individual presentations and patients."

Medical retina is constantly evolving—telemedicine, machine learning, gene therapy, and artificial intelligence are promising advances. "There is no doubt that machines will replace a lot of what we do," says Dr. Jampol. "However, this is positive ... It will free up time for physicians to think more about diseases and develop research ideas. Many of our advances in the next 5 years will be focused on imaging ... and machine learning will play a vital role."

The 2017 ASRS Preferences and Trends (PAT) Survey shows that 10.3% of US respondents and 8.2% of international respondents identify as medical retina specialists. These statistics, combined with an ever-increasing interest in the field, show that the future remains bright for medical retina specialists.

Reference

 Stone TW, ed. ASRS 2017 Preferences and Trends Membership Survey: Chicago, IL. American Society of Retina Specialists; 2017.

Financial Disclosures

Dr. Desai - None

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Dr. Mirza - None.