

Advances in Experimental Medicine and Biology 801

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Catherine Bowes Rickman *Editors*

Retinal Degenerative Diseases

Mechanisms and Experimental Therapy

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Elizabeth Jean Ozan Anderson

April 17, 1941–April 11, 2011

Each of the preceding volumes of these Retinal Degeneration Symposia have been dedicated to an individual who has been an important sponsor or contributor to the field of retinal degeneration research. This volume is dedicated to the late Elizabeth Anderson, an avid and enthusiastic supporter of the young scientists who attend these meetings, and wife of Robert E. (Gene) Anderson, one of the original organizers of these meetings. At several RD Symposia, Elizabeth was the principal organizer of the spouses' program, actively planning and supervising excursions for the non-scientists in attendance. She functioned as special "hostess" for

young scientists, making sure that they were introduced to many of the senior investigators in retinal degeneration research. Because of our close friendship with Gene and Elizabeth, the Editors of this volume asked that we contribute some personal remembrances of Elizabeth for this dedication.

Although we have known Gene since 1970, we first met Elizabeth after our move to Houston in 1977 to become a part of the Cullen Eye Institute at Baylor College of Medicine. During our 17 years at Baylor, we were with Elizabeth and Gene on numerous occasions; we traveled together and became close friends.

Elizabeth was in college working on a bachelor's degree in nursing when she and Gene first met. This completed, Elizabeth went on to become an accredited nurse anesthetist and worked in a number of hospitals in Houston. Elizabeth was my anesthetist (JGH) when I required oral surgery in the early 1980s. The surgeon and periodontist that were treating me warned me on how painful these procedures might be and quickly convinced me to have this performed under general anesthesia in a local hospital. I checked into the hospital the night before the surgery scheduled for early the next morning. I remember being quite anxious when wheeled to the operating room, but Elizabeth had already started an IV and was by my side assuring me that she would not let me feel any pain. The next thing I remember is being awakened by a nurse back in my room who was insistent that I stay awake and drink lots of fluid to flush the remaining anesthetics from my system. Quickly the copious fluid volumes consumed required a visit to the toilet, and I called for a nurse to assist me, because I was still quite unsteady. With the nurse's help, I clumsily got out of the bed with my hospital gown in disarray and made my way to the facilities. I noticed that the nurse giggled as I moved off the bed but thought nothing of it until I discovered, as she had already observed, a big red ribbon tied securely around the most intimate part of my anatomy. Immediately I knew that Elizabeth had been up to some mischief while I was under sedation! Later when I confronted her, she assured me that she had not touched me, but that others in the OR were involved. She did finally admit to bringing the red ribbon into the OR that morning. When I questioned her about the choice of color she smiled and

said, "Darlin', I had a blue ribbon, but that color is reserved for my husband!"

Over the years, we traveled with Elizabeth and Gene to many interesting parts of the world, and on each trip, museums were always one of her favorite destinations. She loved paintings and sculpture. Many who frequent museums stroll slowly through the galleries, pausing when a painting catches one's eye, and then move on, but not Elizabeth. She would read every word of every description on every painting in every room. Gene and Joe would quickly look for a gallery with a bench or chair on which to rest while Elizabeth devoured each display. This love of art prompted her to formally enroll in a local college, and she was working toward a degree in art history at the time of her death.

Elizabeth had very strong opinions about a variety of issues, or perhaps we should say, about most issues. She was fearless, with no reservations whatsoever in sharing her views, and rarely softened her position to please others. One example of this occurred in 2002 during the week of the International Conference of Eye Research that convened in Geneva, Switzerland. The four of us, along with a few other couples, were dinner guests in the home of a Swiss vision scientist. As the evening progressed, and the empty wine bottles accumulated, politics became the subject and it quickly became apparent that Elizabeth and our host's husband did not share the same views. Frustrated that her pronouncements were being challenged, she pushed her chair back, stood up at the table and sang "I'm Proud to be an American", in which she was joined by several others. At the end, everyone at the table, including Elizabeth, had a great laugh, and fortunately the discussion moved on to another subject.

Elizabeth loved to travel, and many of her recurring annual trips were as an accompanying spouse when Gene's profession took him to a scientific meeting, usually held at some exotic destination. Early on at these conferences Elizabeth showed her concern for the young scientists in attendance. It was her personal goal to see that each young scientist she interacted with at the meeting's social function would be able to meet their most admired senior researcher. It was this special characteristic that prompted Ann Milam, a retired vision scientist in Seattle and long time friend of Elizabeth's,

to organize an endowment in Elizabeth's name to support travel for young scientists working in the area of retinal degeneration research to attend the annual meeting of the Association for Research in Vision and Ophthalmology. Solicitations were initially made to Elizabeth and Gene's closest friends and family; then to the nearly 1,000 researchers who have attended the biennial Retinal Degeneration Symposia. Jeff Boatright also distributed a solicitation of support to the distribution list of Molecular Vision. Only a few days before Elizabeth's death, donations had reached \$ 50,000, a level sufficient to provide support for one travel fellow each year. Elizabeth was extremely pleased to be honored and recognized with this tribute. Over 300 individuals have contributed to this endowment that now exceeds \$ 120,000, a sum sufficient to fund 2–3 annual travel fellowships. Recipients of these fellowships will be designated as an Elizabeth Anderson Travel Fellow, allowing Elizabeth's name to appear every year in the ARVO program in perpetuity.

Following this travel fellowship tribute in her honor, the Foundation Fighting Blindness announced the naming of a 5-year grant, the Elizabeth Anderson Career Development Award. A few days later the American Health Assistance Foundation named one of their two-year, \$ 120,000 awards, the Elizabeth Anderson Macular Degeneration Grant. Collectively, these numerous tributes to Elizabeth are a clear indication how she and Gene are respected and admired by the vision research and ophthalmology community. At the end of her struggle, death became Elizabeth's friend, because it alone brought her the peace from her illness that money could not buy, and it removed the suffering that her physicians could not cure. She left a wonderful legacy: that of a devoted wife, loving mother, devoted grandmother and an unforgettable friend to many who work in vision research and ophthalmology.

*Mary E. Rayborn and Joe G. Hollyfield
Cleveland, Ohio*

*Death leaves a heartache that no one can heal,
Love leaves a memory that no one can steal.
(from an old Irish tombstone)*

Preface

The International Symposia on Retinal Degeneration have been held in conjunction with the biennial International Congress of Eye Research (ICER) since 1984. These RD Symposia have been highly successful and have become one of the most well attended meetings in the field. The RD Symposia are successful because they allow basic and clinician scientists from around the world to convene and present their new research findings in a format that allows sufficient time for discussions and one-on-one interactions in a relaxed atmosphere, where international friendships and collaborations can be fostered.

The XVth International Symposium on Retinal Degeneration (RD2012) was held in Bad Gögging, Bavaria, Germany July 16–21, 2012. The RD2012 meeting ties the RD2010 meeting in size, which was the largest ever. The meeting brought together 230 basic and clinician scientists, retinal specialists in ophthalmology, and trainees in the field from all parts of the world. In the course of the meeting, we had 6 plenary lectures, 43 platform presentations and 117 poster presentations. A majority of these are presented in this proceedings volume. New discoveries and state of the art findings from most research areas in the field of retinal degenerations were presented.

For the first time, the RD Symposium was organized around a theme, this time focused on the role of innate and acquired immunity in the initiation and progression of retinal degenerative diseases. The recent discovery that mutations in genes related to regulation of the immune system are responsible for 50% of the familial forms of age-related macular degeneration (AMD) demonstrates the important role the immune system plays in this disease. Based on these findings, it seemed appropriate to focus part of the RD2012 on the role of the immune system in degenerative retinal diseases. To accomplish this goal, six plenary speakers who work in the field of innate and acquired immunity were invited to participate in the RD2012 meeting. The speakers included: *V. Michael Holers*, Professor of Rheumatology, University of Colorado, School of Medicine, Denver, Colorado, USA; *Paul McMenamin*, Professor of Anatomy & Developmental Biology, School of Biomedical Sciences, Faculty of Medicine, Monash University, Melbourne, Australia; *Scott Cousins*, Professor of Ophthalmology, Duke University School of Medicine, Durham, North Carolina, USA; *Frederic Geissmann*, Professor and Chairman, Inflammation

Biology, King's College, London, United Kingdom; *Thomas Langmann*, Professor and group leader at the Institute of Human Genetics, Regensburg, Germany; and *Chi-Chao Chan*, Chief of Immunopathology Section, Laboratory of Immunology, National Eye Institute (NEI), National Institutes of Health (NIH), Bethesda, Maryland, USA. These speakers are world leaders in the fields of complement activation and signaling, the role of monocytes and microglia in retinal degeneration, and the role of cytokines in retinal degeneration. The remainder of the program included topics important to retinal degeneration including: gene therapy, neuroprotective therapy, mechanisms of cell death, mechanisms of neuroprotection, novel animal models of inherited retinal degenerations and AMD, macular degeneration, phenotype/genotype correlations, and transplantation and other cell-based approaches. The resulting program was one of the most comprehensive and up-to-date of any meeting dealing with retinal degeneration.

The meeting was organized by a nine-member committee that included the permanent members Joe G. Holyfield, Christian Grimm, Robert E. Anderson, Matthew LaVail, Catherine Bowes Rickman, and John D. Ash; and the local organizing committee members, Bernhard Webber, Ernst Tamm, and Olaf Strauss. The Symposium received international financial support from a number of organizations. We are particularly pleased to thank The Foundation Fighting Blindness, Columbia, Maryland, for its continuing support of this and all previous biennial Symposia, without which we could not have held these important meetings. In addition, for the sixth time, the NEI of the National Institutes of Health contributed in a major way to the meeting. In the past, funds from these two organizations allowed us to provide 25–35 Travel Awards to young investigators and trainees working in the field of retinal degenerations. In addition, we received generous funding from Pro Retina Germany and the Fritz Tobler Foundation Switzerland. In total, we were able to fund 57 Travel Awards, the largest number ever for these Symposia.

We thank the outstanding management and staff of the beautiful Monarch Hotel in Bad Gögging, which is located midway between Regensburg and Munich. The hotel was easily accessible, but relatively remote, which created the ideal atmosphere to encourage participation of attendees in all scientific sessions and informal meetings during meals. We would like to thank the hotel staff for all of their assistance in making this an exceptionally smooth-running conference and a truly memorable experience for all of the attendees. We would like to express our appreciation for the musical talent of Franz Badura. During our excursion to the Weltenburg monastery, Franz played several beautiful pieces in a Baroque church. Many attendees mentioned this as a highlight of the excursion. We thank Barbara Gareis and her staff in coordinating with the hotel and assisting with the poster boards and other meeting logistics. Barbara is an assistant to Ernst Tamm at the University of Regensburg. We also acknowledge the diligent and outstanding efforts of Ms. Holly Whiteside, who carried out most of the administrative aspects of the RD2012 Symposium. Holly is the Administrative Manager of Dr. Anderson's laboratory at the University of Oklahoma Health Sciences Center, and she has become the permanent Coordinator for the Retinal Degeneration Symposia. Her dedicated efforts with the Symposia since RD2000 have provided continuity not available previously, and we

are deeply indebted to her. Holly worked with Bo Dong and John D. Ash to develop the RD2012 website that for the first time included electronic submission of abstracts, registrations, and online payments.

Finally, we honor the memory of a most beloved regular attendee and supporter of the RD symposium by dedicating this book to Elizabeth Anderson. Elizabeth was a constant advocate for young scientists, as she often encouraged them to get involved in the meeting and to interact socially and informally with the senior scientists. Elizabeth was a major proponent of such interactions, and her encouragement is one of those intangible acts that influence our careers more than we could know.

John D. Ash
Christian Grimm
Joe G. Hollyfield
Robert E. Anderson
Matthew M. LaVail
Catherine Bowes Rickman

Travel Awards

We gratefully acknowledge National Eye Institute, NIH, USA; the Foundation Fighting Blindness, USA; Pro Retina Germany; and the Fritz Tobler Foundation, Switzerland for their generous support of 57 Travel Awards to attend the RD2012 meeting. Eligibility was restricted to graduate students, postdoctoral fellows, instructors and assistant professors actively involved in retinal degeneration research. These awards were based on the quality of the abstract submitted by each applicant. Catherine Bowes Rickman chaired the Travel Awards Committee of eleven senior retinal degeneration investigators. The travel awardees are listed below. Each awardee submitted a chapter to this proceedings volume.

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