On the presentation of the Friedenwald Award in Ophthalmology to Dr. John E. Dowling

It is a great privilege and pleasure for me to introduce Dr. John Elliott Dowling who is to be the recipient of this year's Friedenwald Award. John is a superb colleague and a delightful person who justly deserves this honor. He has the scientific curiosity and clarity of thought that Dr. Jonas regarded so highly in his outstanding scientific colleagues.

In my introduction of John at the recent Association for Research in Vision and Ophthalmology Meeting in Sarasota, Fla., I attempted to present some of the personal side of his life by quoting extensively from a letter that I had received from his mother and using photographs taken of him in his early years. These pictures would not be appropriate in this published introduction, but some of his mother's statements give such a delightful insight into John's younger years that I would like to paraphrase these. Mrs. Dowling must be a truly remarkable person because of the warmth, frankness, and insight of her statements.

John was born in Pawtucket, Rhode Island, on August 31, 1935. He was the fourth child in a family of five. His father is an ophthalmologist and his mother, a chemist; an older brother is an ophthalmologist and one sister is a biologist. I now quote from Mrs. Dowling's letter, "John was always a complete extrovert, happily being a part of a large family, enthusiastic about everything, and grateful for everything that was done for him. He was extremely mischievous and daring. Before he was five years old he had had his head x-rayed for possible skull fracture three times after accidents. Fortunately, the worst that he had suffered was a severe concussion. He was always quite mechanical and thoroughly enjoyed, and put to good use, such toys as erector sets, tool sets, and his electric train. He had many friends and liked sports, especially ice-skating. His first composition was written about winning the potato race at the winter carnival. "He also took violin lessons and played in the school orchestra enthusiastically. He practiced quite well and had a natural knack of drawing sweet tunes out of the violin but finally gave it up in favor of sports. I think his music lessons gave him the love for music he has retained.

"In the sixth grade we sent him to Moses Brown, a Quaker private school for boys, which he loved, although his marks didn't show any improvement until high school. He was active in all sports, playing basketball, baseball, and football. He took part in plays, a musical comedy, and joined a group of boys who wrote and produced their own movies. Their masterpiece was The Devil and Adolph Hitler, with John playing the part of the devil. "After Thanksgiving in his junior year, he contracted polio and was seriously ill. After several weeks in the hospital he was sent home with paralysis of both legs, but he made a good recovery over the years with therapy and exercise. His biggest worry at the time was that he would fall behind in his class; he insisted
on being tutored at home. He worked very hard, both at his therapy and his schoolwork, and his doctors were astonished to discover that he was caught up with his class when they pronounced him well enough to return to school.”

In view of John’s success in the field of biology, his mother quotes an incident that was amusing to her in retrospect. “All of John’s teachers, except one, willingly prepared material for him to be tutored at home. His biology teacher, however, flatly said, ‘John isn’t smart enough in biology and it would be impossible for him to catch up even if he were tutored.’”

After John’s illness he decided to take up golf and become captain of the high school golf team. He also made a letter in swimming and was elected President of the Senior Class. In addition, he was Editor-in-Chief of the Moses Brown newspaper and when he graduated, he was given the prize for the student who had done the most for his class.

John entered Harvard as a premedical student in 1953 and in his junior year started doing research work under Dr. George Wald. This was really the beginning of his career, for his enthusiasm was unbounded. He worked in Dr. Wald’s laboratory the following summers and graduated from Harvard cum laude. He was voted by the members of the Winthrop House to be the senior most likely to succeed. He entered medical school in 1957 and in his second year won the Sona Weiss Award for the best student paper for original research. He decided to drop out of medical school for a year to devote his full time to research with Dr. Wald, with the thought of returning to medical school later. He received his Ph.D. in biology in 1961 and was so fascinated and engulfed in research that he did not return to medical school; he thought there were too many things to investigate to waste time obtaining an M.D. John’s mother quotes him as saying, “Research is such fun, more exciting than any game you can imagine.”

I will not review John’s many accomplishments in neurophysiology, for you can review these in the appended list of his publications. I should like to mention, however, that one of his greatest attributes as an investigator is that he is not wedded to a single discipline but has been able to bring his knowledge of biochemistry, electron microscopy, and electrophysiology into the various investigations that he has undertaken. Especially noteworthy have been his efforts to determine the effect of Vitamin A deficiency on the visual pigments. He reported his biochemical, physiological, and morphological studies in animals with normal retinas and in those with inherited retinal-degenerative disease; these are included in his first 16 papers. In his twentieth publication he firmly established the presence of centrifugal fibers in the optic nerve of the pigeon. His most recent work has dealt with a detailed analysis of each of the five main, different types of neural elements in the vertebrate retina. These papers have made a very important contribution to an understanding of how nerve cells interact to encode visual stimuli. He has also brought forth interesting evidence that identifies the b-wave of the electroretinogram with the glial cells of the Necturus retina.

In 1965 I obtained support from some of John’s colleagues for his promotion to Associate Professor of Ophthalmology and Biophysics at Johns Hopkins. I will quote some of these comments without specifically identifying the individual who made them. One of his senior colleagues at Johns Hopkins in the Department of Biophysics stated, “In my opinion, Dr. Dowling is the outstanding young investigator in the field of vision in our country.” A colleague in the Department of Neuropathology at Harvard said, “Many of us were saddened when John left Harvard to join your staff and we would hope that he could be enticed to return to Harvard at some time in the future.” An associate from Oxford said, “I can say without
reservations that, of the younger scientists that I have met during my sabbatical year in the United States, none impressed me more than Dr. Dowling. A fellow neurophysiologist from Cambridge said, “In my opinion, John Dowling is, at the moment, the most able and productive worker in the United States in the basic science of vision.” A co-worker from the University of London said, “He is to my mind one of the most outstanding biologists I have met in the United States and Europe.” One of his former professors from Harvard said, “I have already written you in the past rather fully my convictions that John Dowling is one of the most promising young men on the American scene—in or out of ophthalmology. Everything that has happened since he joined you at the Wilmer Institute confirms these early impressions. He goes ahead on his own with great originality and enterprise—happily and easily—doing exceedingly interesting work and collaborating and enlisting the cooperation of everyone who can advance it. I hear his praise sung on every side, clearly for the best reasons. Having already established the position in biochemistry and physiology of the visual processes, he has now carved out for himself a leading position in electron microscopy of the retina and the general neurology of the visual system. I think he well deserves a senior post in ophthalmology at Hopkins.”

In addition to John’s outstanding contributions as a scientist, he is an exciting teacher and has been able to bring together neurophysiologists working in the field of vision from the Biophysics Department in the graduate and undergraduate departments of the University, the Department of Physiology and Anatomy of the Medical School, and of the Division of Bio-Engineering of the Medical School.

In all of John’s endeavors he has had the enthusiastic support of his charming wife, Susan, who is a talented artist in the theatre and modern dance.

John, it is truly an honor and a privilege for me to present the 1970 Friedenwald Award of the Association for Research in Vision and Ophthalmology to you.

A. Edward Maumenee

Remarks on acceptance of the Friedenwald Award

John E. Dowling

Thank you very much, Dr. Maumenee, for your very generous words of introduction. I am, of course, highly pleased and honored to present the Friedenwald Lecture this year.

I should like to give this lecture on behalf of the many talented co-workers I have been privileged to have during the past six years at the Wilmer Institute. They have made the laboratory a most exciting place to be, at least for me. A number of these people are here today, and I am pleased to thank them publicly and give them the credit they so richly deserve.