Friedenwald Award and Lecture
It is a distinct pleasure to introduce Dr. Gerald Chader as the recipient of the Jonas S. Friedenwald Award. Jerry has many of the traits that made Dr. Friedenwald a legendary figure. Dr. Friedenwald was an outstanding ophthalmologist, but he considered his greatest accomplishments to be in the field of biochemistry. This combination of laboratory commitment and clinical involvement certainly characterizes the talents that Jerry has brought to his more than two decades of insightful laboratory research conducted against the backdrop of clinically relevant topics.

Jerry's research represents a first-rate synthesis of basic and clinically oriented work. The range of topics in his bibliography of 179 publications amply illustrates his macrocosmic view of science and his broad range of collaboration. But beyond his personal scientific contributions, Jerry has attracted to his laboratory an excellent mixture of scientists from a variety of disciplines. He also has an international network of collaborators who work with him on research projects. Like Dr. Friedenwald, Jerry keenly appreciates the value of cross-pollination in research.

Jerry's academic record provides a good index to his impressive professional career. After earning a full four-year scholarship for his undergraduate work at State University of New York, Buffalo, and following his military stint at the Army Medical Research Laboratory, Fort Knox, Kentucky, he received his PhD in biochemistry at the University of Louisville Medical School in 1966, doing his dissertation on the isolation and characterization of the serum corticosteroid binding globulin. While at Louisville, he married Carla Roosendaal, an exchange student from Holland. Carla and Jerry have three sons—Chris, Eric, and Alex, who, as we all would expect, excelled in their studies and who, as we might not expect, are all taller than their father.

In 1967 Jerry earned a postdoctoral fellowship at Harvard Medical School, working under Dr. Claude A. Villee, the eminent hormone scientist. Fortunately for vision research, however, Dr. Jin Kinoshita noticed Jerry and lured him to the Howe Laboratory to work on retinal corticosteroid binding proteins. For Jerry, it was only a slight shift to another tissue, but to the vision research community, it meant much more. Two years later, when Jin moved to the newly established National Eye Institute, he again persuaded Jerry to join him. About nine years later Jerry succeeded Jin as the chief of the Laboratory of Vision Research.

In his 15 years at NEI, Jerry has garnered many awards, among them the Fight for Sight Basic Science and the Alcon Research Institute awards. In recognition of his outstanding work in retinitis pigmentosa, the American RP Foundation, since 1983, has been funding two fellows to work on RP research under the tutelage of Jerry and Dr. Paul J. O'Brien, chief of the biochemistry section of Jerry's laboratory. Jerry is also on the Scientific Advisory Board of the RP Foundation and on editorial boards of several journals, including IOVS and Current Eye Research.

He has been a leader in four areas of research: the action of retinoids and their binding proteins in retinal function, cyclic nucleotides and vision, retinoblastoma cell differentiation, and growth factor action in ocular function.

In 1976, Jerry and his coworker Dr. Barbara Wiggert first reported a novel protein found only in the retina and pineal body. He has named it the interphotoreceptor retinoid-binding protein, or IRBP. Scientists in his laboratory have now cloned the IRBP gene. Animal models have indicated the possibility that IRBP may be involved in autoimmune uveitis and his group, in collaboration with Dr. Igal Gery, has already identified its uveogenic peptides, as Jerry will discuss in his talk today.

After an initial report on the possible role of cyclic nucleotides, Jerry was the first to show that, in the outer segments of retinal photoreceptors, light acti-
vates the enzyme phosphodiesterase, which in turn induces a drop in concentrations of cyclic GMP. He has since contributed to the ideas that modulation of cyclic GMP plays a central role in transducing the initial light stimulus into an electrophysiological response in the normal retina and that abnormal levels of PDE-cGMP activity often signal early onset of retinal degeneration.

Most recently, Jerry has orchestrated the development of a monolayer culture for studying human Y-79 retinoblastoma cells, a system he described in a symposium last Sunday evening. The single-layer culture facilitates histochemical analyses and observations of changes in growth and morphology. With this system, he and his coworkers have been able to induce the cells to differentiate into neuronal-like, glial-like, and pigment-epithelial-like cells, indicating that these cells probably originate from a common, primitive multipotential blast cell. This finding provides new avenues for research, not only in the etiology of retinoblastoma, but in normal retinal development as well.

After you hear the Friedenwald lecture, I am certain you will appreciate more fully what I have been able only to sketch. I am proud to introduce Dr. Gerald Chader, winner of the Jonas S. Friedenwald Award.