Introducing Joseph L. Demer, the 2003 Recipient of the Friedenwald Award

There is no greater joy for a teacher than when a former student receives a high academic honor. Such joy is mine today as I introduce the Friedenwald lecturer at the 75th meeting of the Association for Research in Vision and Ophthalmology.

Joseph Demer was born in 1955 in Minneapolis as the oldest of eight children. His father was a university-based materials scientist and his mother a biochemist. With such a family background, it seems only natural that Joe began his pursuit of academic excellence early in life. For instance, in the eighth grade he won first place in a science fair project with the ambitious title, "Design and Construction of an Electromagnetic Linear Accelerator to Transport Supplies into Lunar Orbit." Other science projects in high school included constructing on the roof of his parent's house a large radar system to study the ionosphere and operating a self-built amateur radio station from his home. A straight-A student through high school, Joe was valedictorian of his class and excelled also as an athlete in tennis, basketball, hurdles, and jumping.

He worked his way through college at the University of Arizona as a radio and broadcast engineer for a local television station and graduated in electrical engineering with highest honors and at the top of his class.

After college, he entered the combined MD/PhD Medical Scientist's Training Program at The Johns Hopkins School of Medicine. His PhD dissertation was on olivo-cerebellar control of the vestibulo-ocular reflex, researched under the mentorship of David Robinson at the Wilmer Eye Institute.

This and other research in Robinson's laboratory stimulated his life-long interest in eye movements and in the vestibular system. In 1983 Demer graduated from The Johns Hopkins Medical School with an MD and a PhD in biomedical engineering.

He obtained his residency training in ophthalmology at the Baylor College of Medicine, where he became chief resident and then spent a year with me as a fellow in pediatric ophthalmology and strabismus. The year we worked together was most productive and enjoyable, I believe, for both of us. Among the projects we worked on were a study of brain function in human amblyopia, using positron emission tomography; an analysis of optokinetic asymmetry in infantile esotropia; and a study of the cause of strabismus in high axial myopia.

While in Houston, Joe also took up flying and is now a full-fledged instrument-rated pilot who lists aerobatics as one of his hobbies, perhaps because this daredevil sport is a powerful stimulus for the vestibular system in which he has shown so much interest.

After graduating from Baylor, Joe joined the faculty of the Jules Stein Eye Institute, where he rapidly climbed the academic ladder to full professorship and to an endowed chair in ophthalmology at UCLA.

His biography lists 170 publications in refereed journals and 29 book chapters. He has received many awards and honors and has been principal investigator on National Eye Institute research grants without interruption for the past 20 years.

His scientific contributions range from pivotal studies on vestibulo-ocular interaction, optokinetic nystagmus, and visual adaptation to spectacle magnifiers in patients with low vision. His most recent studies of orbital mechanics with magnetic resonance imaging, especially his discovery, in collaboration with Joel Miller, of muscle pulleys for the rectus muscles and their possible functional significance in normal persons and in patients with strabismus, have received world-wide attention from his peers. As we shall hear in his lecture, this is most exciting and original work, with numerous theoretical and clinical implications.

Gunter K. von Noorden

DOI:10.1167/iovs.03-0507
Investigative Ophthalmology & Visual Science, March 2004, Vol. 45, No. 3