Biography for James Arns

I grew up on a farm outside the small northeastern Iowa community of Denver and appreciated the many freedoms of country life. But I quickly discovered I was not well suited to make my living on the farm.

After high school I enrolled at the University of Northern Iowa. My path was quickly found in the Department of Physics. I believed then, as now, that an important part of any education is derived by participating in non-academic activities. I was a UNI Student Senator, member and President of the UNI Chapter of Sigma Tau Gamma Fraternity, member and Vice President of the Inter-fraternity Council, member and President of the Student Physics Club and a member of the Student Advisory Committee to the Dean of the College of Natural Sciences. Despite all of this and with the collective sigh of relief from my parents, the faculty, and myself after four years I graduated with a Bachelors of Arts degree in Physics in 1978.

With my newly earned degree in hand I looked toward the future. Within four months of graduation I married my college sweetheart, Deborah, accepted an engineering position with Hughes Aircraft Company and moved to Los Angeles, California. I had built an interest and a rudimentary capability in holography while at UNI and Hughes was developing holographic technology to support various military applications. I enjoyed the challenges of designing systems and fabricating holograms to support state-of-the-art optical displays for more than 14 years while at Hughes. My responsibilities grew from general engineering tasks to operational supervision of the facility where the holograms were made and finally involved new product research and development.

I joined Kaiser Optical Systems, Inc. in Ann Arbor, Michigan to further the research and development of new holographic technologies and applications. My concentration on improving Volume Phase Holographic (VPH) technologies have been leveraged into numerous VPH-based optical holograms used in various military, scientific, and telecommunications applications.

Over my professional career to date, I have thirteen US patents granted and authored or co-authored several articles on Volume Phase Holographic gratings. In 1991 I was honored to receive Hughes Aircraft Company's L.A. "Pat" Hyland Patent Award. This award is Hughes' highest recognition to inventors responsible for patents considered significant to the future of the company.

Outside of work I have too many interests for the amount of time available. I enjoy traveling and am an instrument rated private pilot. As an avid photographer I'm seldom far from a camera. My photo credits include two covers on technical journals, numerous marketing photographs of instruments and holographic products and local photo club awards.

UNI's Department of Physics produced the environment where I could explore an interest outside the normal curriculum. Without this freedom I most likely would not have found the science and technology of holography that I have enjoyed as a career. I am grateful to the department's Faculty to have been so supportive when it really mattered.