Summary

Since I was a small child through age 81, I always enjoyed science. With good fortune, I worked from going to school, through a professional career as a teacher and researcher, and finely retirement. All throughout, maintained my scientific drive and continue to work on research to this day.

Earliest Years [1935 – 1957]

I recall with great clarity my first scientific experiment. I was about four years old. It disproved my childish theory about forces, gravity and levitation. In retrospect, I can see in it all the ingredients of a proper investigation. Observation: Some things can fly - birds, airplanes. Observation: Holding onto a bar at the playground, my arms are strong enough to haul myself off the ground, grasping in my legs a toy truck with a seat on top. Hypotheses: I should be able to fly. Experiment: Sit on the truck, lift my feet off the floor, grab the seat with my hands and haul upward. Result: No flight. Hypothesis rejected. While I resigned myself to the outcome, it puzzled me until I read about Newton's laws.

My father hoped that I grow up to be a lawyer or doctor. But in the end, he was happy to get a physicist.

From the time I learned to read through LaSalle College, I was a sponge, soaking up everything I could read about math and science. I had some decent teachers, but no influential mentor, terrible advisors, and only a few peers who shared my interests. My interests were totally outside any experience of my large Irish-Catholic clan. I wrote my first computer program there over a half a century ago. But I had no contact with real scientists during all that time.

My high energy physics career spanned 50 years from 1957 to 2007.

- At Berkeley for graduate school, I finally met people like myself. I designed and built a successful experiment in 2.5 years (those were the days!). Shelved it for a year to gain more experience before moving on.
- At Princeton, in addition to having three sons with my wife Nancy in the space of 37 months, I worked on a number of experiments at the Princeton, Argonne, Brookhaven and CERN.
- Fermilab was under construction when I returned from Switzerland. I joined with colleagues at Michigan and Wisconsin to build a hyperon beam and detector there to study much higher energy hyperons. We hit an unexpected “gold mine” of physics. In the summer of 1975, the polarization effects were up to 12%. Lee Pondrom and I were awarded the Panofsky Prize for the work.
- I rounded out my High Energy Physics career working on the tevatron here at Fermilab.

- I turned my attention to Astrophysics and did a “postdoc” in my son’s group at University of Pennsylvania.
- While a stroke has slowed me down a bit, I still think about my research every day!

Throughout my career, I have made working with students at all levels a central part of my research. Receiving this award and reading the letters from my former students is truly one of the highlights of my career. I am deeply humbled and greatful for the kind and generous words they have written. Thank you very much.