My very first research experience was in high school, when Sputnik-era funds gave me the opportunity to do a multi-drug study of cancer growth in rats. I entered this project in the Westinghouse Science Talent Search and was rewarded with the opportunity of meeting John Kennedy and Lyndon Johnson at the White House. The statistical methods that I acquired from my mentor, Melvin Schwartz, continue to be useful in my work today. A year later I performed a study of the effects of galactose on cataract formation at the New York Eye and Ear Infirmary, and I am still fascinated by eye research. As an undergraduate, I had three wonderful scientific experiences. I worked one summer with Martin Karplus on the $H+H_2$ problem. I got to sharpen my programming skills, and to this day I remember that the impact parameter is the fifth entry in a 6F10.5 field of initial conditions for a classical trajectory. During another summer I participated in a NASA program at Columbia (again, thanks to Sputnik) led by Robert Jastrow, and, along with several dozen students, I travelled by chartered plane to all the major space exploration sites in the US. By far my most important undergraduate experience was with Dudley Herschbach at Harvard, where I worked with Ron Herm on a Stern-Gerlach experiment, which I refer to regularly in my undergraduate pchem course at UIC. One memorable experience was the night that our water-cooled magnet sprung a leak in a vacuum chamber housing a fully loaded alkali oven. In the aftermath I disassembled every part of the apparatus. It was there that I met Evvy, the love of my life, with whom I spent memorable evenings in Bill Klemperer's darkroom. Having caught the molecular beam bug, I stayed on to do a PhD with Dudley and Yuan Lee on the reactive scattering of hydrogen atoms by alkali dimers.

After leaving Harvard I did a post-doctoral study of elastic scattering with Aron Kupperman at Caltech, where I was able to combine experiment with theory and also learned about gravitational potential energy surfaces in the Sierra-Nevada. Deciding to broaden my scope, I did another post-doc, this time with M. C. Lin at NRL, where I first learned about lasers. Ever since then, the focus of my research has been on the interaction of light with matter. My first foray was to use a CO_2 laser to accelerate the chemiluminescent reaction of nitric oxide with ozone, which I continued to work on with Jerry Moy when I arrived at UIC in 1974. This was one of the first studies of vibrationally enhanced chemical reactivity.

During a sabbatical with Dick Zare in 1980-81 at Stanford, I learned about the wonders of dye lasers, and after returning to UIC I started using them to monitor chemical reactions by means of laser-induced fluorescence (LIF) and resonance-enhanced multiphoton ionization (REMPI). My then post-doctoral fellow and long-term friend, Sivaram Arepalli, was the first to employ these methods to detect halogen atoms and halogen halide molecules. These tools opened many doors for us, allowing studies of the photodissociation of chloroethylene molecules with Peter Reilly, Yibo Huang, Yulin Huang, and Guoxin He, above threshold ionization with Sujatha Unny, and the photo-dynamics and spectroscopy of hydrogen halides with Rohana Liyanage, Robert Callaghan, Dan Robie, and Peter Reilly. In this period my group continued to be interested in vibrational energy transfer; Ken Beck developed the method of time-resolved optoacoustics, and Yannis Vlahoyannis and Mitsuo Koshi used the $NO+O_3$ reaction to track the rates of energy transfer. Nathan Presser in my group was the first to use infrared multiphoton excitation to promote a symmetry-forbidden ring opening reaction. He also studied tunneling reactions with Dan Robie.

An important breakthrough occurred during a month-long visit to the Weizmann Institute in 1988, when I learned from Paul Brumer (whom I have now known for nearly 60 years) and Moshe Shapiro (who passed away just a few months ago) about their new work on the coherent control of chemical reactions. Sitting late one afternoon in Moshe's office, I came up with the idea of using the variable refractive index of a gas cell to control the relative phase of two laser beams. This idea proved to be enormously useful, and it led to the first experimental demonstration of the Brumer-Shapiro method of two-pathway control of the branching ratio of a chemical reaction. Five students (Shaoping Lu, Valeria Kleiman, Jeanette Fiss, Anna Khachatrian, and Vishal Barge) wrote their dissertations on this topic, and Valeria co-authored with Zhan Hu and myself a landmark *Science* paper in 1995.

In 1995-96 I spent a sabbatical year with Phil Bucksbaum at the University of Michigan, where I learned about the emerging field of ultrafast science. In 1997 I renewed my acquaintance with Tamar Seideman, and we struck up a collaboration on coherent control that has continued to this day, with close to twenty published papers and book chapters . Although it took me a number of years to acquire my first Titanium Sapphire laser, my research group eventually shifted entirely to the femtosecond world. Looking for a new research direction, I became interested in using ultrafast lasers to control material processes. One discovery, which became the thesis topic of Sima Singha, is that we could use coherent pulse trains to control the carrier dynamics in a semi-conductor. My interest in materials led to a renewed interest in eye surgery, and working with Deepak Edward my group used a Ti:Sapphire laser for ablating the trabecular meshwork in a human eye as a potential therapy for glaucoma. Other applications include laser ablation of solid materials and double-pulse laser-induced spectroscopy studied by John Penczak. One discovery that I am especially fond of is what we call the "Ghostbuster Effect." Youbo Zhao found that when two ultrafast laser beams intersect in air, most of the energy from one beam can be channeled into the other if the timing and focal conditions are appropriate. This effect is caused by stimulated Raman scattering in a laser-induced plasma.

In 2011 I spent a sabbatical year at the Weizmann Institute, where I enjoyed the hospitality of two long-time friends, Yehiam Prior and Ilya Averbukh. Through this collaboration, together with Tamar Seidemann and Maxim Sukharev, I entered the nano-world of plasmonics. Back home, I returned to my first love of molecular beams, using shaped ultraviolet laser pulses to control internal conversion in pyrazine. Grant Barry is currently trying to explain our discovery of a laser-induced transparency in this molecule, which we believe is caused by wave packet localization on an excited potential energy surface.