

Bob and Betty Beyster  
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Dear Bob and Betty,

This is wishing the Beyster family a joyous Easter, with a personal note of thanks to Bob with fond remembrances for being the right person for me to work for as I entered the world of work as a young man. Bob, this started out being a short personal “thank you” for the influential and positive impact you have had on my life, and it turned into a long (3,090 words) remembrance of personal events that involved you. I hope that the times, places and names in these events trigger happy memories for you as well.

### **Thanks Dr. “B”**

Dr. J. Robert (Bob) Beyster, you were the first and last person I ever worked for in my life, starting right after I graduated with a PhD in particle physics in December 1967. I joined GA to work for you in January 1968 when I had just turned 27 and you were 43, as I remember. To my surprise, GA was bought by Gulf Oil when I started at GA in 1968, with you leaving to start SAI in February 1969. I left GA when my contract was over to continue working for you at SAI in June 1970. My experience working for you was so good for me that it ruined me from working for anybody else for the rest of my life (except, working for myself). You gave me all the freedom anybody could want, provided I met essential business needs by creating new ideas to address front-page science and technology issues for profit. From my taste for freedom, which you fed and tempered in the fires of competition, I grew wings that have carried me to far-off adventures of the mind and in many parts of the world for the past 35 years, and this wonderful adventure continues. I can’t thank you enough.

### **Dr. “B” – You Are One of a Kind (Sui Generis)**

My early projects for GA and SAIC (radiation transport, then criminal justice, health, energy, environment, and transportation) were science based. When you interviewed me to work at SAI, you asked me what I wanted to do and I said anything that no one else was working on, which was everything but Defense. You said OK as long as I could support my salary. You gave me the freedom to find my true calling and I eventually moved on to found my own company, Paradigm Research International, LLC (not listed in your chart of spin offs, by the way). While I loved science and technology, I discovered it was too constraining for my interests, and would have required me to focus very narrowly and deeply for me to become a top career science professional. Otherwise, I would have stayed with you and SAIC for life. Instead, I became more interested in understanding the big picture of societal changes and creating hands-on strategies for people and institutions to adapt to these changes, activities that were sparked by my work at SAIC.

As you know, I continued to work for SAIC as a consulting advisor to new generations of employee-owners to pass on the lessons I learned as a first generation “SAICer,” that is, until you retired. I often wonder how different my life might have been if my first work experience had been in a traditional job box working with a traditional boss. I can’t thank you enough for being the non-traditional CEO, mentor,

and friend you have been for me, and for your positive impact on my life and career. You are truly one of a kind, or in Latin, Sui Generis.

### **My Latest Adventure**

To complete the circle to the present, here is a brief update on my recent life since I attended your first book signing a few years ago. I replaced both knees, and then after rehabbing and getting bored playing golf in 2012, I got going again. I decided I needed a change, so I moved to Baltimore last summer to be with my new special lady friend (a PhD in education policy), and to set up my office in the middle of the bubbling creative heart of Baltimore city near some 300 startups, Johns Hopkins and other universities, and the art and music institutes. I have conducted research on paradigms for over 30 years and have many insights and knowledge to draw on, so I am now working solo to mine and apply this knowledge for the digital age by re-positioning myself as a writer, thinker and advisor for the world via social media. This started a year ago when I had an epiphany in Dublin, Ireland and started experimenting with the process of “uploading myself” in a personal blog ([slicesoflifeblog.com](http://slicesoflifeblog.com) – [Life As I Find it](#)). I am adding two professional companion blogs ([Work as I Find it and Meaning as I Find it](#)) this year and will write original content on major paradigm shifts occurring in the new ways that society is learning to work and live in the digital age. All blogs will be cross linked to one web site ([ViewShift.net](http://ViewShift.net)) since they inter-relate with each other, but may also be accessed as separate and independent blogs.

I split my time between writing and advisory services. I am working on three big-picture books in various stages of completion that will address important trends: *The Innovative American Mind* (Patterns of Innovation from our founders to our future), *Wild Bill Donovan’s Brain* (Big data analytics before there were computers), and *The Shift from Tangibles to Intangibles* (The invisible “wheel” for the next millennium). I give talks, give advice, and conduct workshops on specific topics drawn from the research I conduct for these books and the services I offer.

### **Take Away: You and SAIC Were Ahead of Your Time**

One conclusion I have reached from my work that goes back to you is my belief that your employee ownership ideas were 40 years ahead of their time, and that SAIC will be seen as a seminal breakthrough of the new evolving way the economy will work as time unfolds; I see SAIC as the world’s first company that was designed and operated as a “crowd-sourced” organization in which you were the primary interconnector, a function that today could be provided by the Internet. From a network perspective, I see the SAIC that you managed as an example of Dr. John Seely Brown’s “community of shared interests,” concept which generates growth by self-balancing the individual’s desired work with the individual’s reward earned (same dynamic as employee ownership except what is being owned collectively is more than tangible stock; additional intangible values are included as well). I think the Internet offers the opportunity to refine, develop and replicate a new business model based on what you built and operated by hand. Internet platform experiments are afoot in this new direction.

### **Shared Memories with a Reluctant Genius**

Below are just a few specific memories of interactions I had with you that have stuck in my mind over the years, and provided valuable life-lessons I learned. I often tell these stories to others as interesting insights I absorbed from my interaction with a reluctant genius, Dr. J. Robert (Bob) Beyster:

1. The Interview: This is the first question you asked me when you interviewed me at GA for my first job ever, grinning with what was to be your signature sly smile: “Can you explain to me exactly how your PhD research using pions tells me what holds the nucleus together?” I was shocked. I thought my PhD orals were over! I gathered myself and answered, “A pion captured by a low-Z atom moves in a low orbit around the nucleus, such that its wave function spends a lot of time in the nucleus and changes the atom’s 2p to 1s x-ray transition energies in a way (i.e., its average energy and the statistical spread of this energy) that is measurable and could be compared to the predictions of quantum theory, which describes how the strong nuclear force should work.” My experiments confirmed predictions of quantum theory that I calculated.  
**I learned to always expect the unexpected.**
2. The Contract: My first task at GA on my first week of work was to draft an upcoming quarterly report by the end of the week that described a project research plan on a new client contract I was assigned to. I asked you how I was supposed describe a research plan on a project I had not worked on yet. You answered, “Because you are supposed to be smart since you have a PhD in the physics.” I blinked and said, ok.  
**I learned to always expect the unexpected, again, and keep my brain on at all times.**
3. The Generals: I had to present my research findings to the top government officials who were funding my research. Prior to the presentation you pulled me aside and said, “By the way, don’t ever refer any questions to me that these Generals ask about your research because I won’t know the answer; that’s your job since you are doing the work.”  
**I learned I would always be responsible for presenting and defending my work. This lesson was reinforced for everyone every Friday afternoon when someone had to take their turn to stand up and present their project work to their peers and defend it. This was like brutal weekly practice that prepared us to play the real game of business.**
4. SAI Stock Deal: Towards the end of my contract at GA in 1970, I met with you for dinner at a restaurant below the Plaza offices on Prospect Street where you offered me a job with SAI with an 18% increase in salary to \$19k and stock options I would buy for \$3k based on business I could bring in and manage. I said I did not know anything about stock options but asked if you would mind writing the deal on a napkin and signing it for my security and you did. I accepted the offer.  
**What I learned years later was mostly the value of trust but also the importance of getting agreements in writing. When it came time for me to exercise my options after three years with the new business I brought in, there was no formal record of my deal with the SAI stock administrator at the time, Gerry Pomeranian, who could not act on a verbal offer. And I had long lost the dinner napkin of my deal with your signature on it. I explained the situation to you, and you remembered the napkin, did the right thing without having to, and promptly authorized my purchase of SAI stock.**
5. Experiments to Analytics: To earn my stock options I was expected to be innovative and create new solutions for pressing national security problems in order to, first, support my salary, and then to explore anything else I wanted to pursue in science and technology. You gave me an overhead account to charge to while I figured out something. What I knew about was radiation transport through air that I had conducted

experiments on in a laboratory I managed at GA using a 16' tall by 8' diameter insulated tank of liquid nitrogen (nitrogen gas is 78% of air) to simulate air at a density of 600 times normal air. SAI was a fledgling company with no money for expensive experimental facilities. I would have to resort to analytical methods to calculate radiation effects. But the only way to do this at the time was very expensive computations using physics diffusion equations and main frame computers that produced a radiation effect answer for one scenario at a time, at about \$100k per calculation after many hours of computer time. Competitors had already locked up this business. I had to find a new angle. Two events conspired to give me the new angle I had been looking for.

The first event was the Nuclear Test Ban treaty that had been signed in 1963, which meant researchers could no longer use nuclear explosions in the atmosphere to measure radiation effects, they would have to use calculation methods. The law had begun to take hold, and with computers getting more powerful and accessible, a new analysis industry was being born: the new approach of "calculate instead of experiment" for answers was taking hold. I would be catching a new economic wave if I could only figure out a way to calculate radiation effects that was cheaper.

The second event was my discovery from analyzing existing data that radiation dose vs distance curves had similar smooth shapes for different scenarios and might be easily modeled by fitting polynomial curves to the data and squeezing out the extra space to use a "master curve" that could be manipulated with variable parameters. Maybe a new direction was possible for my business at SAI: mathematical modeling for the new analytics industry.

So, with my Hungarian computer programmer, Louie Huzar, I developed a model and he fit existing curves of data to my model for a family of radiation doses vs distance, and squeezed them into a single curve with many parameters to reflect variations of scenarios. We discovered we could calculate radiation dose scenarios in seconds for pennies with 20% accuracy compared to the expensive and precise physics calculations. So I wrote a proposal to the Defense Nuclear Agency for \$50k to develop this analytical model for one (neutrons) of the three main types of nuclear radiation: neutrons, gamma rays, and X-rays. I won the proposal and developed the Air Transport of Radiation (ATR) analytical model for neutrons.

ATR received continuing funded to build out the model for over ten years to cover all radiation sources and scenarios. ATR was first used online, then incorporated into global war gaming computer codes, and later burned into a computer chip and made available to field personnel in a hand-held unit. **Bob, you made all this possible.**

**What I learned was several things: (1) Do not spend so much overhead without letting the CFO know first; It's easy to get dangerously over your head very quickly. I was lucky this time. (2) Innovation works best when people are forced to look outside the box and given limited resources to explore. (3) Nature and life have a lot of unused space that can be squeezed out for benefit. (4) Big picture conceptual solutions that address society's new needs can provide careers of practical and profitable work for many by understanding the change forces of paradigm shifts that are creating these new needs.**

6. Martin Sperling Magic: I remember giving you and Larry Kull a wide-eyed frantic briefing at dinner shortly after I joined SAI trying to make the case for hiring Dr. Martin Sperling, whom I had worked with closely and trusted. I had oversized graph charts lying all over the dinner table with results of a test I had given Martin to unfold precise physical information, known only to me, that I had purposely degraded in a noisy spectrum of data to test his mathematical unfolding algorithm. Martin's algorithm worked like magic and both of you looked at me like I was some kind of crazed person on drugs because I was so emphatic that this was breakthrough stuff. If you remember Martin, he was this far out theoretical physics dude who "only liked to work on the beach where he could think." When I asked him how his algorithm worked he gave me some mumbo jumbo about "minimizing the Hamiltonian for the information of the system." I did not understand it but it worked and he was hired.

A few years later he had a funded imaging project at a local university research hospital in which he had two MDs and an IT assistant working for him developing new diagnostic methods of creating 3D imaging of human body function. Twenty years later I ran across a world renowned physicist in Arizona, [Dr. Roy Frieden](#), who had come up with a similar mathematical method from which he was able to derive all the laws of physics starting from a pure information perspective, and he had published his work in the top physics peer-reviewed Physical Review Journal along with several books. He finally made me understand the method, and he gave this interpretation of his breakthrough: when you asked how much information you can get from a physical system the answer is that the laws of physics are the most that the universe would allow us to know, given the inherent statistical variations in the Fisher Information for the system being examined." Frieden also shows how his new approach ties in with the teachings of past [philosophers](#).

**I learned to take risks on things (and people) that I don't understand if I trust things that others understand that I do trust.**

7. Sows Ear to Silk Purse to LaJolla: I moved DC to head up a multi-million dollar NIH health research contract I wrote and won, I helped build JRB Associates from a \$500 startup investment to \$30 million in annual revenue with contracts at the FDA, EPA and DOE among other smaller agencies. My last effort was in Energy. During meetings week, I gave a presentation to you, board members, and sector executives laying out the Energy Market with original slick charts that revealed all the forces at work and the kind of opportunities they presented for SAIC. I hit it out of the park and after my presentation, you stood up and announced, with that now familiar sly grin, "what happened to you, I sent you to DC as a sow's ear and you come back as a silk purse." I took that as a rare compliment and knew I could do this kind of thinking for a living. I went back to DC, finished two million-dollar plus energy conservation proposals, submitted them, won them, staffed them, and then turned in my resignation.

**I learned that though I had graduated from SAIC with honors, it was now time to go out on my own to figure out the next step in my life's path. SAIC and Bob Beyster would always be close to my heart and bring back the fondest of memories.**

Thanks again, Bob, for the freedom you gave me, your smiling toughness, your trust, and for the learning playground you created and maintained for so long to let all of us stretch to find ourselves and make some money along the way.

Dr. Robert (Bob) Harris