

From the Peaks of West Virginia to the Pinnacles of Physics

October 23 2005

By Harvey C. Nathanson

The first time I met Larry Sulak was at a competition. In 1960, ten bright high school students were at Carnegie Tech in Pittsburgh looking for summer jobs. At the same time, ten PhD candidates in Electrical Engineering had lab jobs looking for candidates.

We PhD candidates were each required to give a 10 minute “sales” talk on our thesis topic. My talk must have seemed pretty exciting to some, because three of the ten high school students wanted to work for me.

I decided to interview them individually:

The first high school student introduced himself as “first in class” at NY’s Bronx High School of Science. He commented that my thesis topic in semiconductor junction device physics seemed interesting to him. He also indicated that he had already found on one of my slides a small but significant error in one of my equations. NEXT!! (I heard myself say).

The second high school student seemed to have equally-high qualifications. He felt that the subject of my thesis, though of general interest, would profit by taking a more fundamental approach to my subject matter, an approach which he by coincidence had been thinking about himself over the last year. He said he would be thrilled to share his thoughts with me. NEXT! (I thought)

The third, a bright-eyed bubbly young man from Beech Bottom West Virginia named Larry Sulak, enthusiastically said that he had never heard of a more exciting thesis topic in his life. He said: “Golly Shucks, Dr. Nathanson”... (Did he say DR NATHANSON? I wouldn’t hear that phrase for TWO years! My head was swimming!) “What ever it took, including washing test tubes, cleaning up after experiments, and even sweeping the floor, it would be a great pleasure and honor to work with such a distinguished graduate student as you, Dr. Nathanson”. THIS, my brain said, was the Summer Student I would choose.

WHAT A CHOICE! Larry was a wonder in the Laboratory and a brilliant collaborator on design of experiments. No lab slave this young man.

After high school graduation, we got him to register at Carnegie. He went into a series of technical flirtations, including his first one with the Electrical Engineering department. Here, his sheer ability quickly caught

the attention of the EE Department Head, Rod Williams, who was looking for a talent “home run”.

Unfortunately for Professor Williams’ ambitions, at the end of his freshman year, Larry won a prize as the Year’s Best Physics Student in the Freshman Physics Class. Larry felt very proud.

At that point, I did something which almost lost me MY PhD: I suggested to Larry that his breadth of intellect made it imperative that he NOT consider EE, but SWITCH to Physics, where one’s understanding of the truly fundamental can literally ‘carry one to the stars’. Larry made his important switch to Physics, and I managed to somehow defuse my disappointed EE Department Head and finish my own PhD.

But in the last 43 years of my own reasonably-fruitful and rewarding scientific career, I have always mused that perhaps my greatest and most fundamental contribution to Science was helping convince Larry Sulak to join the Physics Department at Carnegie Tech in Pittsburgh in the waning Summer of 1962.

The rest was of course history: The SCORE: Electrical Engineering: 50. The field of Fundamental Physics: 50000!!

Much Luck and Love from all your Pittsburgh Friends, Larry, and much love to you and Beth from Esther and myself.