

## SPOTLIGHT ARTICLE:

The Accidental Scientist by: Phyllis Siegel, President, Frio Pharmaceuticals Inc

*Are you a scientist? If you are a teacher, you are!* The definition of Science is “the observation, identification, description, experimental investigation, and theoretical explanation of phenomena.” Isn't this what you do every day in all of your classes with each of your students? Strangely enough, however, science can be an intimidating subject for teachers and students alike.

My story may encourage you.

I had no intention of becoming a scientist. Initially, I earned a BA in English and subsequently became a CPA and attorney. In the mid nineteen-eighties, while practicing law I started representing inventors. My role was to provide legal, regulatory and other "non-science" functions so that the scientists could concentrate on science.

However, like children, businesses take on a life of their own and eventually I founded Biomedical Development Corporation (BDC) and we began to conduct the science in house.

My knowledge of science grew accidentally. I was preparing budgets and other documentation for grant proposals to the National Institutes of Health for the “real” scientists. With each new proposal, my science vocabulary and comprehension increased -- one word and one concept at a time.

I did not even know basic scientific terms. My first word was micro-organism. A micro-organism (or micro organism or microbe) is an organism that is microscopic (too small to be seen by the naked human eye).

As each grant was written and each experiment performed, I learned more about science and more about micro-organisms. I remember the first time I accidentally assisted with the design of a microbiology experiment. I was reviewing a grant proposal and asked the Ph.D. scientist, “Why did you select *Pseudomonas* (a micro-organism found in dirt, plants, and animals) instead of *Staph aureus* (a micro-organism found on skin and mucous membranes)? This product will ultimately be used to treat, protect and beautify skin.” She replied, “Using *Staph aureus* instead of *Pseudomonas* is great idea!”

The question was not intended as a suggestion. I was merely engaged in the process of learning. But I remember how thrilled I was that my observation was validated and my idea adopted.

On a later occasion, two Ph.D. scientists were convinced that an experiment would not work. I felt certain it would. I asked a co-worker with a high school degree to go to the lab, prepare the formulation and try the experiment. This experiment, conceived and conducted by two “non-scientists,” provided the basis for a medical patent and numerous products to treat infections. And the idea qualified me as a co-inventor on the patent. That day I realized that each of us could have a role to play in science.

Now I'm comfortable talking about our products to scientists, doctors, and investors. Recently, I presented at the 2007 Rice Alliance Life Science Venture Forum, where we received an award for Most Promising Company. I was most flattered when several people commented that, unlike many of the other presentations, our subject matter was easy to understand.

Over the last 20 years, I have developed an insatiable curiosity for science. On any given day, I can entertain myself within the realm of science. While I used to argue with other attorneys in the courtroom, now I argue with bacteria in the laboratory. Currently, we are developing cutting-edge educational/scientific modules that will enable teachers to quickly grasp the subject of microbiology and instill the love of learning and fascination for science in their students.

My hope is that as you observe, identify, and explain phenomena, you will share this gift of science with your students. After all, science is all about inquiry and inquiry is the basis for learning.

Maybe you will start with one vocabulary word--maybe it will be micro-organism.

Have fun on this fabulous journey, my fellow scientists!