**A letter and brief vitae from your Intro to Chem 1013 professor**

**The letter**

Chemistry scares the poop out of most people. I can’t count the times I’ve been to a party with strangers and after being asked what I do (chemistry, duh…) they back away like I’ve fouled myself with explosive diarrhea.

The subject’s vile aura is amplified by the vast majority of those who have already survived a chemistry course. These hollow-eyed folks whisper their experience in terms akin to living through the Holocaust.

The situation for both you and me is even worse since most of you are ***forced*** to take chemistry; your academic program says you ***have*** to. So, by default I’m preaching my passion to a room full of people who’ve been extorted to pay real money for a course that may seem entirely irrelevant to their lives.

And then there’s the chemist’s peculiar character flaw. As a group, me and my fellow chem geeks can’t help getting tumescent deconstructing and reveling in the lovely, delicious, meandering threads of a topic instead of caressing `the Big Picture.’ We just go ga-ga over details. Thus, as you read through (*if* you read through) the 25 or so chapters in a standard chemistry text, each of the 25 chapters seems comprised of 75 unconnected short stories written in languages different as Swahili and Klingon, and, which appear to have no common theme (except that it’s all going to be on the `test`.) Small wonder few survivors of Chem classes can remember a thing about the subject after a week’s escape from it.

You’ve got issues, too. While I’m betting you are all decent, intelligent people, my empiric observation after 24+ years of teaching is that most beginners at chemistry curl up like frightened armadillos as soon as anything not immediately obvious is presented. If I had a dollar for every time a student tells me, with defiance and bravura, that he/she ‘is not good at math,’ I could retire to Bermuda on a 75 foot yacht. American students in particular, are blithe in their ignorance of things technical and mathematical. If it’s not going to be on the test, not on Facebook or featuring a U-tube kitty cat, it isn’t important to us.

So let’s say we wipe the slate clean and start with why, fer chrissake, you should take a chemistry course in the first place. The syllabus asserts that chemistry is a mental discipline for understanding what can’t be directly experienced-a kind of `Zen’ for the material world. Let’s agree that acquiring that kind of intellectual kung fu is worth trying to learn.

Second, let’s bail on the usual formal lecture format and interact. I detest lecturing in long stretches anyways and I want you guys to get involved rather than just sitting passively and watching me bray like a television program you can’t surf away from. I already know from educational research your concentration will blank out after only 6 minutes of any lecture (unless the lecturer is stark naked…fyi-not gonna happen.)

Thus, while each lesson will have a definite plan, and I’ll start by chattering at you, I’m going to demand respond and interaction through exercises, Q &A and if necessary, judicious application of tasers. I’ll be also use inverted classroom tactics (…if you don’t know what that is, just wait…) and incorporate lots of both traditional and electronic in-class drill and practice to break up the lecture into chewable bits.

You’ll of course also need to do all the obvious cliché things: work hard, stay organized, try, try again.

You’ll also need courage.

 If you have a question, ***for pig’s sake,*** ***ask it!*** Don’t chicken out. Don’t think you’ll `figure it out later.’ Trust, me, you won’t. And don’t worry that `you will slow me down,’ or, that you will be thought of as `stupid`. I will eviscerate any student that laughs or makes fun of you when you ask a question. Student questions are the sacred jewels of teaching. Your confusions are where the learning *starts.* Don’t let it be where it ends. I **love** questions.

Finally, if you are frustrated over something, let me know. Don’t smolder and gripe in private. Learning can be fun, but it is painful. We’re working your chemistry mind muscle and if you are flabby, 90 lb chemistry weakling, you’ll puff and ache for awhile. If you think I’m messing up, kicking sand in your face and confusing you and everyone else, **tell me.** I screw up **a lot** and have gained much wisdom from students who provide honest feedback about what’s not working.

Wow. I’ve really rattled on….and I thought I said I didn’t like lecturing. Ok maggots, let’s go to work.

Doc Fong

14 August 2017

**The Doc’s vitae**

# Professional Preparation

Purdue University Chemistry Postdoctoral Fellow, 1979-81

University of Michigan, Chemistry Postdoctoral Fellow, 1978

University of Michigan, Physical Chemistry, Ph.D. 1978

University of Michigan, Physical Chemistry, M. Sc., 1975

College of Chemistry, University of California, Berkeley, B. Sc., Honors, 1973

# Appointments

**2006-2016** Program Coordinator, Forensic Science program, SUNY Alfred State College

**2000-** Professor of Chemistry, SUNY Alfred State College

  *chemical instrumentation, environmental chemistry, organic chemistry,*

*physical chemistry, analytical chemistry. Introduction to chemistry, general chemistry*

**1997-2000** Associate Professor of Chemistry , SUNY Alfred State College

*chemical instrumentation, analytical chemistry, organic chemistry* **1993-97** Assistant Professor of Chemistry, Alfred State College

 *chemical instrumentation*

**1991-92** K-12 science education coordinator for Corning Inc. RD&E

 **1985-92** Senior Research Scientist, Materials and Glass Science, Corning Inc.

 *high temperature electrochemistry, diffusion in glassy solids, electrochromics*

* 1. Senior Scientist, Exploratory Research, Corning Incorporated

####  solar conversion, novel semiconductors, non-oxide glasses

**Recent Awards**

**2006**  SUNY Chancellor’s Award for Excellence in Teaching

**2005**  SUNY Chancellor’s Award, for Excellence in Research and Scholarship

 **Grants**

**1)ATE-NSF Proposal DUE 0402408** “A Collaboratory for Applications of 3D Visualization Technology in the College Classroom” (with S. Beck, P. Craig, A. Peskin and M. Plumb) 2004 $700,000

2)A**TE**-**NSF Proposal DUE 0070910,** “ A Two Year College Cooperative Applied Research Initiative for Faculty and Students in the Engineering and Science Technologies” (with A. Peskin and M. Plumb) 2001 $300,000

**3) ATE-NSF Proposal DUE 0088392,** “Bridging Institutions and Disciplines Using Shared Instrumentation,” (with R. DeRosa, G. McGowan, M. Hluchy) 2001 $250,000

**U.S. Patents :** # 4,989,767 ; 4,892,857; 4,847,138; 4,788,165 ; 4, 658, 057