

New Approaches in Chemistry at Dakota State University

Wow, what a summer. I've had lots and lots to do, and I think, I'm pretty sure, I finished it all. The major new project, as you might well imagine, goes along with the DSU wireless incentive. I did get a grant to develop ways to integrate the laptops into my courses, and, as you might imagine, I started with general chemistry.

OK, so, there are two major advances that I am attempting this year. First, new Pasco systems are being purchased to interface with the laptop computers. You may remember Pasco; it is a system in which experimental data can be collected directly by the computer, rather than writing the numbers down and entering them later. The Pasco systems will come with temperature probes, pH probes and a few colorimeters. The plan is to bring in more Pasco equipment as time goes on (next year, for example, we will buy the rest of the colorimeters and conductivity testers).

Secondly, all of our general chemistry students will be required to purchase HyperChem Student edition. The student edition can do everything that the professional edition can do, but with a few limitations; that is, if you want to run *ab initio* calculations, you are limited to (if I am remembering correctly) twenty atoms. I am going to strongly encourage students in all other chemistry courses to purchase this software package as well (\$79 in the bookstore, plus tax, which includes a user manual). This software package will be used to replace the VSEPR lab, to supplement the quantum mechanics lab, and will be used from time to time in the lecture as well.

So, doesn't sound like a whole summer's worth of work, eh? OK, then, check out the new lab manual that goes with all of this. There is a link to this 216 page behemoth on my home web page, or you can access it directly at <http://www.homepages.dsu.edu/bleilr/npmanual.pdf> if you are so inclined. You'll recognize about half of the labs; I've used them before. The rest were written from scratch. Enjoy!