CLUSTER 1 (Quantum Physics) ORGANIZATION

We will proceed by giving 10-15 minute introductions to new ideas and techniques, and then spend time helping you one-on-one to implement the programs that need to be written. *Sometimes we will ask you to log out from your computers during the times when we are presenting new material. Please do so.*

Students in this cluster will arrive with a range of knowledge. This will especially be the case since there is a mix of grade levels. We will proceed by assuming that you know very little in advance, especially about programming. This helps makes sure that no one 'gets lost'. On the other hand, we want to give some challenges to students who already have seen some of the material before. If you ask, we will point you to appropriate links on the course web page that you can try.

If you do undertake some of the additional assignments, please do so only after finishing the baseline programs, even if you might have seen aspects of them previously. This guarantees we can count on everyone having a common core of knowledge. In addition, we will often build more complex programs upon simpler ones, so everyone needs to have these foundation codes in place.

In this endeavor, as in most, it is essential to be well organized. We will start with a small number of programs, but by the end of the month you might literally have a hundred or more codes in your directories. You should give your programs names which remind you of what they do, i.e. use 'geometricseries.c' as a name, and not 'code137.c'. Another very important rule to follow is this: Once you get a code working and doing what it is supposed to accomplish, do **not** make changes to it. Instead, make a copy and then change the copy. For example, after we write a one dimensional random walk code (molecules just move on the x-axis), we will upgrade it to allow the molecules to move in two dimensions (x and y). As you write the two dimensional code it is very useful always to have your working one dimensional code for reference. Obviously you can only do this if you have preserved the original and are modifying a copy. Of course, making frequent copies also means you have more programs around, so, again, stay organized!