BIOENG 455 Project Report Tips 2021

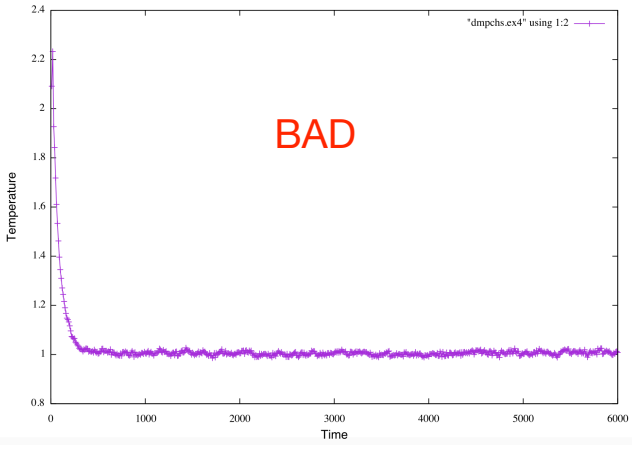
The semester project should be at least 8 pages and written in the form of a scientific paper with the following sections (see the examples on moodle):

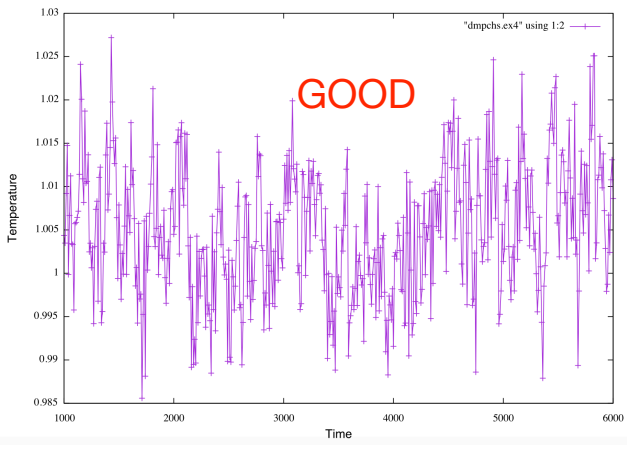
- **Title**
- **Introduction** - include references to published work if you find some in the area of your project; explain why the problem you're studying is interesting to you
- **Method** - describe DPD briefly and why it is suitable for your project; what you did to create the simulations, initial states, measurement types; it's important here to note that setting up a simulation is sometimes harder than collecting results - help the reader see what the tricky parts are in your simulation problem
- **Results** - use graphs instead of tables if possible as they are easier to understand; if there are clear inaccuracies in the data (e.g., systematic errors) describe them here where they occur, don't wait for the discussion
- **Discussion/Conclusions** - Here you should discuss what you can conclude from your results (don't just restate the results), how accurate you think it is (i.e, error analysis), and what you would do if you wanted to continue the work.

  Include a discussion of the major errors you think contribute to limiting the accuracy of your problem (for some problems systematic errors will dominate but for others statistical errors might be worse, in the latter case, you can say that running for longer would produce better results. For systematic errors, it may not be the case the doing a longer run improves results. Think about the effects of the initial state on the results.
- **References** - if you find papers on the same/similar topic to that you have chosen, cite them. You can quote from it too. If your results differ from theirs, try and explain why.

Tips for presentation of data

Don't waste white space in graphs especially the effects of the initial state, e.g.,





If you do remove data from a plot you should explain why, e.g., “First 1000 time points removed for clarity”. Otherwise missing data could look sloppy or, worse, suspicious!

Make axis labels and tic marks big enough to be legible (my examples above are not good)

Captions are important; draw attention to the important points of the plot.

If a graph has a jump, or something that looks strange, mention it. It may be irrelevant, but then it’s good to show that you recognise it is irrelevant. If you ignore it, the reader doesn’t know if you even noticed it.

Include diagrams, snapshots, pictures, cartoons, they help a reader to make sense of the (sometimes very dense) data and and text. In a journal article, there are usually page limits which prevent you adding many figures, but there’s no limit here!