Troubleshooting

Getting familiar with a new program

- Read the manual

- It may be helpful to first try run the program interactively to find the correct command line options
  - Good chance to use `top` to get rough estimate on memory use etc

- If developers provide some test or example data, run it first
  - Make sure the results are as expected

- You can use test queue to check your batch job script
  - Limits : 15 min, 2 nodes
  - Job turnaround usually very fast
  - Can be useful to spot typos, missing files etc before submitting a job that will spend long in the queue

- Before very large runs, it's a good idea do a smaller trial run
  - Check that results are as expected
  - Check resource usage after test run and adjust accordingly
  - Try different core numbers and see how the software scales

Troubleshooting checklist

Start with these if you job fails:

1. Did the job run out of time?

2. Did the job run out of memory?

3. Did the job actually use resources you specified?
    1. Problems in batch job script can cause parameters to be ignored and default values are used instead

4. Did it fail immediately or did it run for some time?
    1. Jobs failing immediately are often due to something simple like typos in command line, missing inputs, bad parameters etc

5. Check the error file captured by batch job script

6. Check any other error files and logs the program may have produced

7. Error messaged can sometimes be long, cryptic and a bit intimidating, but try skimming through them and see if you can spot something "human readable" instead of "nerd readable"
    1. Often you can spot the actual problem easily if you go through the whole message. Something like "required input file so-and-so missing" or "parameter X out of range" etc.