

## Environment, Modules, and Job Submission Cheat Sheet

Environment Variables		Modules	
Print current environment variables: <b>\$ env</b>		Print current environment variables: <b>\$ module list</b>	
Print the contents of a specific variable: <b>\$ echo \$PATH</b> <b>\$ env   grep PATH</b>		Print the contents of a specific variable: <b>\$ module avail</b>	
Define new or edit existing environment variables (contents at the beginning supersedes contents at the end): <b>\$ export PATH=\$PATH:/new/path/to/add</b> <b>\$ export PATH=/new/path/to/add:\$PATH</b>		Define new or edit existing environment variables: <b>\$ module show modulename</b>	
		Load and unload modules: <b>\$ module load modulename</b> <b>\$ module unload modulename</b>	
Environment variables reset by logging out and in: <b>\$ logout</b>		Find more help on using module commands: <b>\$ module help</b>	
Job Submission Script Comparison			
Feature	SGE (Lonestar4)	LSF (Shark)	PBS (Nautilus)
Resource directive	<b>#\$</b>	<b>#BSUB</b>	<b>#PBS</b>
Number of nodes/procs	<b>-pe #way #</b>	<b>-n #</b>	<b>-l n=#:ppn=#</b>
Wall clock limit	<b>-l h_rt=hh:mm:ss</b>	<b>-W hh:mm</b>	<b>-l walltime=hh:mm:ss</b>
Queue	<b>-q queue</b>	<b>-q queue</b>	<b>-q queue</b>
E-mail on job begin	<b>-m b</b>	<b>-B</b>	<b>-m b</b>
E-mail on job end	<b>-m e</b>	<b>-N</b>	<b>-m e</b>
E-mail address	<b>-M email</b>	<b>-u email</b>	<b>-M email</b>
Job name	<b>-N jobname</b>	<b>-J jobname</b>	<b>-N jobname</b>
Output log	<b>-o logname.o</b>	<b>-o path/</b>	<b>-o path/</b>
Error log	<b>-e logname.e</b>	<b>-e path/</b>	<b>-e path/</b>
Out & Err to same log	<b>-j y (omit -e)</b>	use <b>-o</b> without <b>-e</b>	<b>-j oe</b>
Working directory	<b>-cwd path/</b>	<b>-cwd path/</b>	<b>-d path/</b>
Initial directory	(default = `pwd`)	(default = `pwd`)	(default = \$HOME)
Queue Command Quick Ref			
Command	SGE (Lonestar4)	LSF (Shark)	PBS (Nautilus)
Submit a job	<b>\$ qsub jobfile</b>	<b>\$ msub &lt; jobfile</b>	<b>\$ bsub &lt; jobfile</b>
Delete a job	<b>\$ qdel jobid</b>	<b>\$ cancel jobid</b>	<b>\$ bkill jobid</b>
Show status of jobs	<b>\$ qstat</b> <b>\$ showq</b> <b>\$ showq -l</b>	<b>\$ qstat jobid</b> <b>\$ qstat -f jobid</b> <b>\$ qstat -u username</b>	<b>\$ bjobs</b> <b>\$ bjobs -u all</b>