

# Scholar cluster

You all should have accounts on the Scholar cluster, which is a dedicated front-end queue in the Carter cluster. Basically, it is a set of multi-core processors you can use to run jobs for this class. This will keep our high-CPU-need programs from interfering with other students in other classes.

Information on this is available at

<https://www.rcac.purdue.edu/compute/scholar/>

<https://www.rcac.purdue.edu/compute/scholar/guide>

(This may be difficult to read in Internet Explorer 9, unless you notice the “Expand all” link in the upper right of the page!)

To access, use ssh. In a terminal window:

```
ssh scholar.rcac.purdue.edu
```

Relevant commands are “qsub” and “qstat”, and you can get information on these by accessing their man page, as in “man qsub” from the command line.

You each have 5GB of storage in your home directory, and close to 1TB in a scratch directory. In terms of storage-performance, the home directory is slow access, but the scratch access is fast. Your scratch directory is stored in the shell variable \$RCAC\_SCRATCH. For example, you can “cd \$RCAC\_SCRATCH”. The contents of the scratch directory will be archived after 90 days of inactivity. The home directory will be disabled when the class is over.

Example shell scripts for bash and [t]csh can be found in `~lev/pub/scripts/hello_world*`

The next page is a simple “cheat sheet” of things that may be useful.

Any questions not answered by the user guide can be directed to [rcac\\_help@purdue.edu](mailto:rcac_help@purdue.edu)

# Cheat sheet (from RCAC)

- Catalog of installed software: <https://www.rcac.purdue.edu/software/?r=carter>
- 'module avail' for full list of available software modules, (Matlab and Python and C/C++ are available!)  
'module avail xxxx' for available versions of software 'xxxx',  
'module load xxxx/x.y.z' to load specific version of 'xxxx';  
'module purge' to clear all previously loaded modules.
- Directories:  
\$HOME (not purged),  
\$RCAC\_SCRATCH (files subject to purging after not accessed for 90 days);
- 'purgelist' to show files scheduled for an upcoming purge run;
- 'myquota' for your current disk quotas;
- 'qlist' for PBS queues that you can submit to. BTW, since currently Scholar is part of Carter, and Carter has GPU nodes, note the 'standby-g' queue that you have access to. More details in Carter's user guide (<https://www.rcac.purdue.edu/compute/carter/guide/>) Being a standby, it is the least predictable queue with lowest priority compared to scholar queue and all owners queues.
- 'qsub -q scholar -N justname -l nodes=NN:ppn=PP -l walltime=HH:MM:SS myscript'  
to submit myscript into the scholar queue with job name justname. PBS job ID will be printed upon successful submission.
- 'qstat -a' to see all jobs in all the queues,  
'qstat -a scholar' to see all jobs in scholar queue only,  
'qstat -a -u \$USER' to see your jobs in all queues,  
'qstat -a JobID' to see specific job (or 'qstat -f JobID' for full details),  
'qdel JobID' to delete job,  
'qalter .... JobID' to alter job's parameters;
- X11 is installed, so interactive jobs ('qsub -l -v DISPLAY ....') can use visualization tools. Of course, 'ssh -Y' is necessary then (or Thinlinc via thinlinc.rcac.purdue.edu);