**Equipment**

The Genome Informatics Facility (GIF) has bought into a shared resource named Condo that has a total of 1904 total processor cores and 15,232 GB of RAM that is housed and maintained by the High Performance Computing facility at ISU. This shared resource has 119 nodes. Each node has 128 GB of RAM except for one, which has 2,000G of RAM. GIF can use 728 thousand cpu hours every six months on this machine. GIF also purchased 144 Terabytes of redundantly backed-up RAID-6 storage space, 10-20 Terabytes of which is available to conduct these analyses. This machine is where the bulk of the data analysis will be performed (genome assembly, annotation, alignment, comparative genomics etc). If we find the computational resources at ISU are insufficient for the assembly due to limitations in RAM or for the annotation due to limitations in processors then as an XSEDE campus champion for Iowa State, Andrew Severin will obtain a research allocation of resources on the NSF eXtreme Science and Engineering Discovery Environment (XSEDE). The resources at XSEDE include Blacklight, which has a shared memory as high as 16 Terabytes and Stampede, which has 102,400 total processors.

GIF has a webserver with 12 cores and 64 GB of RAM. This machine hosts the GIF website, dokuwiki, and GBrowse. Dokuwiki is used as a secure online notebook to record the commands and programs used in the genome assembly, annotation and comparisons. The wiki page is made available to all members of the research team to provide feedback and enhance coordination, collaboration, communication between members of our team. A local installation of Genome Browser (GBrowse) is used to visualize the next generation sequencing data to ascertain the quality of the assembly and annotation. A secure GBrowse instance will be created for members on the project. The final assemblies and annotations will be hosted by ISUGIF.

GIF has an archive server with 132 TB of storage. This machine serves as tertiary backup of all raw data and scripts that generate data analyses. This secondary site backup ensures the safety and integrity of the raw data and analyses in case of catastrophic failure at the primary site of data analysis in the High Performance Computing Facility at Iowa State University.