Cluster Uplift Proposal

(as of December 05, 2019)

Detailed Technical Summary:

- 1 Petabye (933TB usable) of local compute ("hot") storage running Panasas parallel file system
- 24 new compute nodes, each with 192GB of RAM and 32 cores (768 cores total, 6GB of RAM per core)
- 1 Large Memory Node (1.5 Terabytes of RAM, 32 cores, 46GB/core)
- 25 Gigabit Ethernet data and storage network
- Upgrade in operating system (RHEL/CentOS 8) and migration to SLURM job scheduler
- Expansion room in both enclosures and networking to accommodate existing compute nodes, faculty purchases, and future expansion

Additional Notes:

- After migration of existing nodes (and before new faculty purchases), cluster will have over 1100 cores.
- With increase in compute nodes, NFS/SAN performance would degrade. Parallel file system will address all performance issues, including hardware tiers (NVRAM, SSD, and large HHDs are included)
- Storage can be added easily, and performance increases linearly with additional storage.
- Existing LITS storage will be available for access as archival ("cold") storage
- Future expansion possibilities include additional Large Memory nodes and GPU nodes
- New uplift will take 8 weeks after purchase, and will be completely integrated off-site by vendor.