

# Team Tennessee

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ORNL is managed by UT-Battelle, LLC for the US Department of Energy

# Where do our team members come from?

University of Tennessee-  
Knoxville

Maryville College

Arizona State University



# Team Preparation

- Summer 2019 internship at Oak Ridge National Laboratory
  - Allowed for collaborative experience with our teammates & familiarize ourselves with our cluster, **Cosmo**
- Fall Semester
  - Met once weekly as we all attend different universities



# Hardware

- 4 CPU Nodes
  - Cray CS-500 - 192GB DDR4-2666 RAM
- 1 GPU Node
  - Cray CS-Storm 500NX - 384GB DDR4-2666 RAM
  - 8 Nvidia Tesla V100 SXM2 GPUs
- 4 IB Ports per node for Mesh Network
  - No IB Switch
- Dense GPU configurations have seen success before!



# Software Stack

- CentOS 7.6
- xCAT Diskless Deployment
- SLURM
- Intel® 64 Compiler 19.0.4.243
- PGI Compiler 19.10
- OpenMPI 4.0.1



# Team Strategy

- Found power efficient clock cycle range to optimize workload efficiency in both runtime & power consumption
- Compute nodes will be set to sleep mode when not running tasks
- Only GPUs will be used for benchmark runs
- Monitor power consumption with continuously running scripts that receive PDU data
- Monitor fan speeds with a script

