Research Computing at Amherst College

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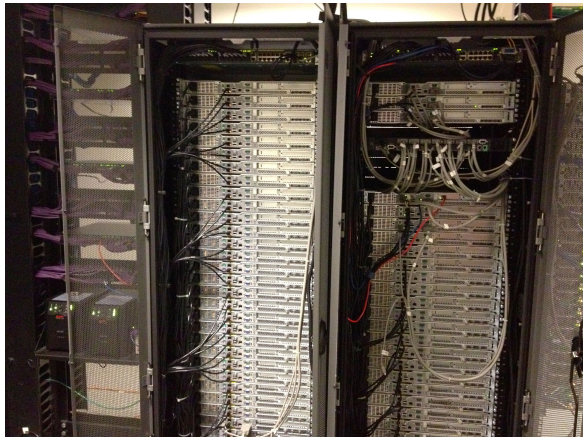
Amherst College

- Undergraduate, liberal arts, residential
- 1,800 students — 8:1 student-faculty ratio
- 40% of students complete a senior thesis

Computing Cluster

- 2005 NSF Major Research Instrumentation grant
- 51 nodes — more coming
- 408 64-bit cores — Intel Xeon @ 3 GHz
- 2 GB RAM/core — more coming
- 2.5 TB of NFS disk space
- CentOS (Red Hat Linux)
- HTCondor job management



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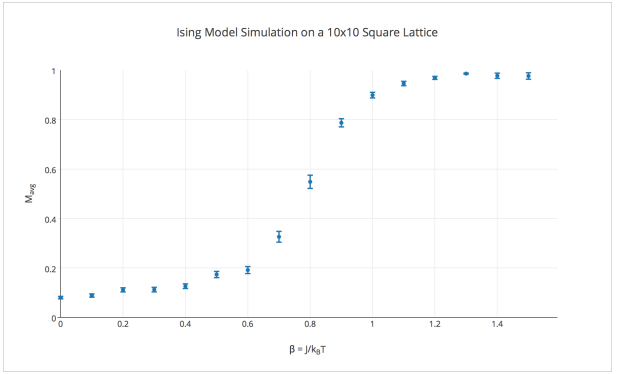
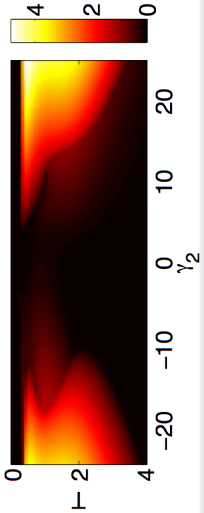
Education

- Often 1-on-1 due to varied applications: C/C++, Matlab/Octave, Mathematica, R…
- Summer short course simulating an Ising model: Scientific Computing with Python





Sample Applications

- Mathematics — Wave propagation through nonlinear lattices
- Computer Science — Virtual memory management
- Geology — Reconstruction of 3D CT-scan imagery
- Astronomy — Spectra of low surface-brightness galaxies
- Physics — Scalar φ^4 quantum field models
- Chemistry — Molecular modeling
- Biophysics — Cell wall physiology
- Biology — Phylogenetic analysis