

# HPC Enterprise Structure

- Definitely need two tiers of systems
  - Consensus on two points
    - Only allow problems that need first tier resources on first tier machine
      - Exception for code development and deployment
    - Second tier machines should be distributed as opposed to centrally located
- Large online access to data storage for analysis and visualization locally
- Architecture has to support global and domain decomposition communication models
- Recognize that the capability machine may exceed the ‘sweet spot’ for price/performance
  - Second tier machines should be at ‘sweet spot’

# Effective use of system

- Needs software support
  - Code porting and development
    - Concerns about current codes scaling up to 1000s procs
  - Distribute computational science efforts to coding groups rather than only at the platform center?
- Local analysis and visualization
  - Avoid data movement especially back to local workstations
  - Significant resources for development of parallel analysis and visualization tools
  - Highly tuned coupling between data storage and analysis machines
  - Send images not data to desktop
- Resources for training students in ‘computational’ science
  - Beyond the 1 week tutorial
- Support for multiple users to access the data
  - Allow for treating model runs as public datasets

# Resource Allocation Model

- Should be a review panel that establishes duration and size of jobs
  - Include a mechanism for combining science and computational resource reviews
- Flexibility is key
- Support for event studies
  - Not real time interruption, but priority

# Support for developers

- Science groups have to be support for all activities from code development to execution to science investigations
  - Funding should reflect unified effort
- Need more than ‘If we build it they will come’