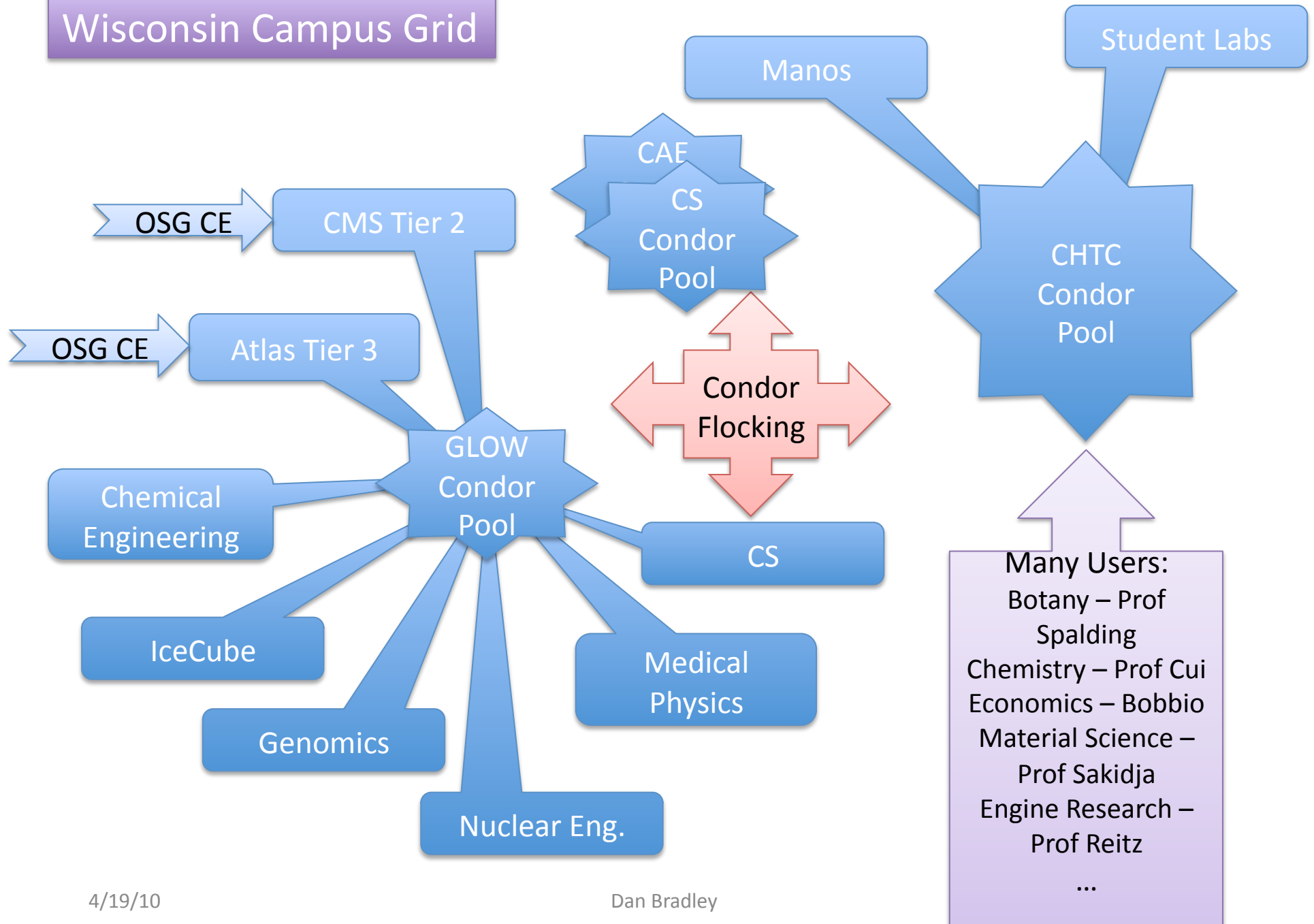


# Grid Laboratories of Wisconsin

Presented at the Virginia Tech visit to  
FermiLab

# Wisconsin Campus Grid



# System Administration

- GLOW is physically distributed
  - hardware locally managed
    - installation, power, cooling, network, maintenance
  - software centrally managed
    - kickstart → cfengine
  - Users and job submission sites managed locally
    - GLOW authorizes submit sites, not individual users
    - Jobs run as a slot user, not as submitting user
- CHTC is mostly centralized
  - Some users admin their own submit sites
  - Most use central submit site
- People:
  - Central: Ken Hahn + student
  - GLOW Sites: typically a local student + Ken
  - Technical board: meet monthly

# Usage Policies

- GLOW
  - Members own specific machines
    - To be a member, must have  $\geq 1$  rack
  - Owners have immediate preemption rights
  - Otherwise, fair share
    - $\sim 1/3$  of all usage is opportunistic
    - modest hack: periodically adjust user priorities to balance relative weight of groups
- CHTC
  - Most machines not owned – opportunistic

# Types of Jobs

- Condor standard universe
  - Popular with apps that can use it
- Serial (vanilla universe)
  - Most jobs
- Small MPI
  - Claim a whole-machine
- Large MPI
  - With special arrangement, must run on owner's resources

# Using OSG

- Mostly, just want batch system interface
  - JobRouter
  - GlideinWMS
- Experience
  - More successful when submission to OSG is centrally managed

# Storage Technologies

- AFS – convenient for user applications
- NFS Lite, Condor file transfer, etc.
- Data storage managed by user groups
  - CMS: dCache
  - ATLAS: xrootd
  - IceCube: Luster
- HDFS centrally managed service in CHTC

# Engaging Users

- ~1 FTE technical support
  - big help getting user workflows working
    - DAGMan, matlab, file staging, validation
    - average 1 new group/application per 1-2 weeks
  - periodic checkups (every few months)
- Engagement of PIs and on up
  - different game, Miron, GLOW execs



# Incentives for sharing

- Research groups do not pay for power.
- CS (Miron) provides carrots
  - sysadmin, technical support
  - ~15% of GLOW is not owned - opportunistic