Metrics breakout session
Metrics of Success & ROI

• *What is success?*
  – Measures depend on the audience (e.g. administration, researcher focus)

• *Qualitative vs. Quantitative*
  – Anecdotes, success stories vs. numbers
Quantitative Metrics

- Citations/references in proposals, publications
- Grant proposals submitted/funded
- Participation in interdisciplinary research
- Credit courses offered
  - Modules for instruction
  - Complete courses
- Utilization & demand above capacity (queue lengths)
It’s not just cycles

• Data stored, accessed
• Data transferred
  – Intracampus
  – Campus to repository
  – To make case for campus & national connectivity
  – “Need quantitative justification.”
Science Drivers justify need

- % users & utilization by discipline using HPC
- # faculty served
- # user vs. PIs
- # new users
- What % of computational science being served?
- *Denominator is hard to determine*
Funding metrics

• Of all HPC users, identify those funded:
  – External federal, industry, etc.
  – Internal
  – See U Buffalo Metrics on Demand database

• Savings if centrally vs. decentrally managed
  – Factors: Power, HVAC, HR, Space
  – Degree of consolidation

• % grant-funded staff
How well do we fit national CI

• # national resource CI users:
  – TeraGrid
  – OSG
  – CaBig
  – etc.
Relative metrics to rest of University

• Relative metrics (funding, etc.) for
  – HPC
  – Library
  – “clean rooms”
  – Network
  – Cores
  – Etc.

• % of CI budget relative to “total” budget (define “total”)
Return on Investment

• Superstars/large grants
• Job creation
• PhDs, other degrees
• Computational time to solution
  – Can we measure productivity?
• IP
  – Startups, patents, spinoffs
Qualitative

• Community involvement
  – National organizations
  – Partnerships

• Idea: Condensed version of this breakout as input to annual NSF facilities survey?
Outreach

• Underrepresented groups
  – Baseline in HPC unit
  – Baseline for total HPC users
Recruiting, Retention

- Rate of involvement in candidate interviews
- # incoming graduate students using CI
- # CAREER awardees using CI
- Recurring users
- Correlation to publications (HubZero)