US Future Internet Research

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Research vs. Testbeds

- **Research:**
  - NSF FIND program
  - NSF ERCs
  - ??

- **Testbeds:**
  - Emulab (central, 24 satellites, s/w)
  - PlanetLab (distributed)
  - DETER (central)
  - GENI (in planning...)
Issue Importance

- **FI research projects around the globe are tackling a broad range of issues (routing, security, trust, etc.). Do you view any of these as more or less important? Why?**

  - **Most important:**
    - Science of networking (Day, Touch, Ford, et al.)
    - *Reason:* lay foundations
    - Relationship between routing, provisioning (DTN routing)
    - *Reason:* solve old issues by avoiding old roadblocks

  - **Least important:**
    - Name/addr split, scale/dynamics of label distribution (LISP)
    - *Reason:* head-on approaches, revisiting “dead horse” issues
Ensuring Ops/Research Dialogue

- What's the best way to ensure dialogue between network ops and the research community?

- Dialogue may not be key.

- Research should lead net ops, not just react to perceived needs.

- Important to review reports (e.g., NANOG, etc.), poll and discuss with net ops. community, to:
  - Find an ops problem
  - Do NOT fix the problem; seek to avoid it, e.g., BTNS
How do you expect FI research results to overcome deployment challenges?

A) Overlays, e.g., Mbone, 6bone,…
B) Ask for simple hooks rather than full extensions, e.g., OpenFlow
C) Circumnavigate impediments, e.g., BTNS as it avoids the need for a key distro protocol