



NSF Campus Cyberinfrastructure PI and Cybersecurity Innovation for Cyberinfrastructure PI Workshop

September 23 – 25, 2019 | Minneapolis, MN

NSF Program (either CC or CICI):

Program Area: CC

Award Number: 1827225

PI: Donna Liss

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**Project Title: CC* Network Design: Network Upgrades to Improve
Engagement in Science Discovery and Education**



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Quad Chart for:

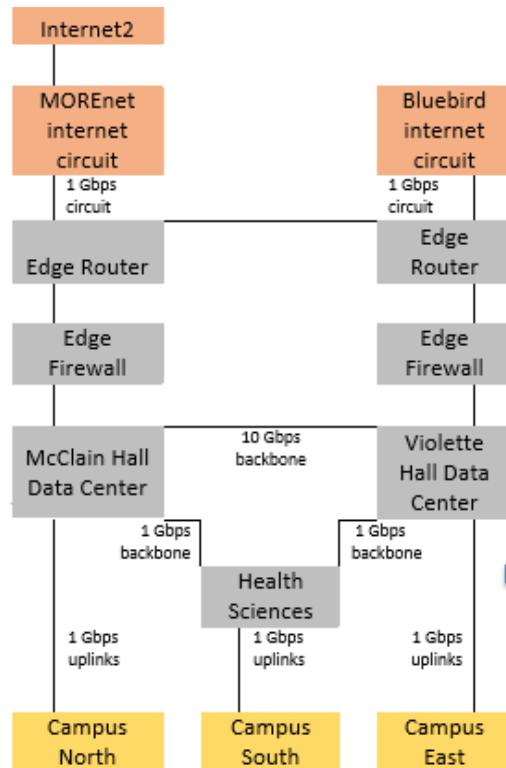
CC Network Design: Network Upgrades to Improve Engagement in Science Discovery and Education*

Challenges:

- Bottlenecks moving large data sets.
- Backup of large locally stored data sets.
- Support for changes in the curriculum.

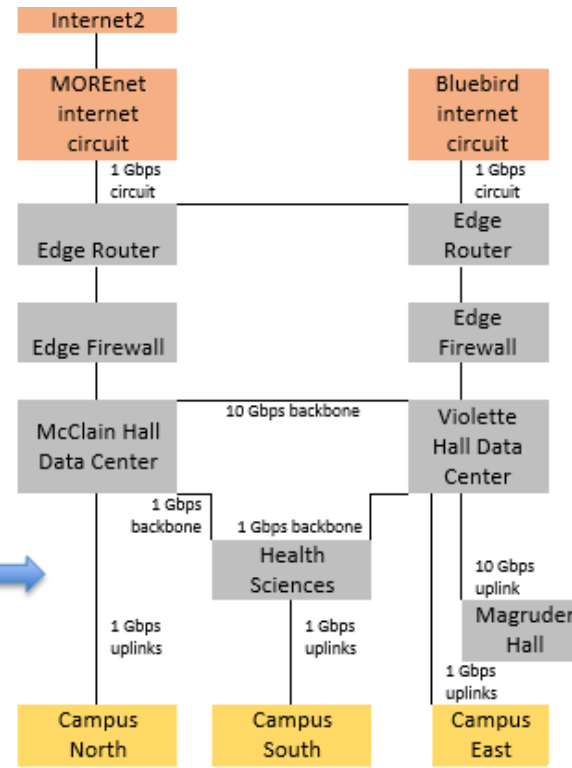
Deliverables:

- Ten-fold increase in data access rates for STEM-related disciplines.
- Increased bandwidth to observatory.
- Improved data transfer of large data sets.
- Better network monitoring tools.
- Federated identity strategy.
- IPv6 in the curriculum.
- Reinvigorated outreach plan.



Logical Network Design (before upgrades)

The current network architecture does not provide for Gig to the desktop speeds. The University desires to upgrade to Gig to the desktop speeds, as well as faster building uplink speed for Magruder Hall.



Logical Network Design (after upgrades)

After the upgrade, the proposed network architecture would include Gig to the desktop speeds in Violette and Magruder Halls, along with a faster building uplink speed for Magruder Hall. In addition, the bandwidth to the Truman Observatory would also be increased.

Scientific Impacts:

- Students involved in high quality astronomy research.
- Remote observation capabilities.
- Quantification of light pollution.
- Enhanced computational chemistry applications.
- Establishing Natural Language Processing dictionaries.
- Building low-cost wireless distributed soil sensors.
- Incorporating IPv6 in the curriculum.

Metadata tag:

<Student
engagement>
<Transition to
practice>