

CC*DNI CAMPUS DESIGN NORTHERN'S NETWORK EXPANSION FOR LARGE SCIENCE AND ENGINEERING DATA FLOWS

Jorge Crichigno, PI
Northern New Mexico College

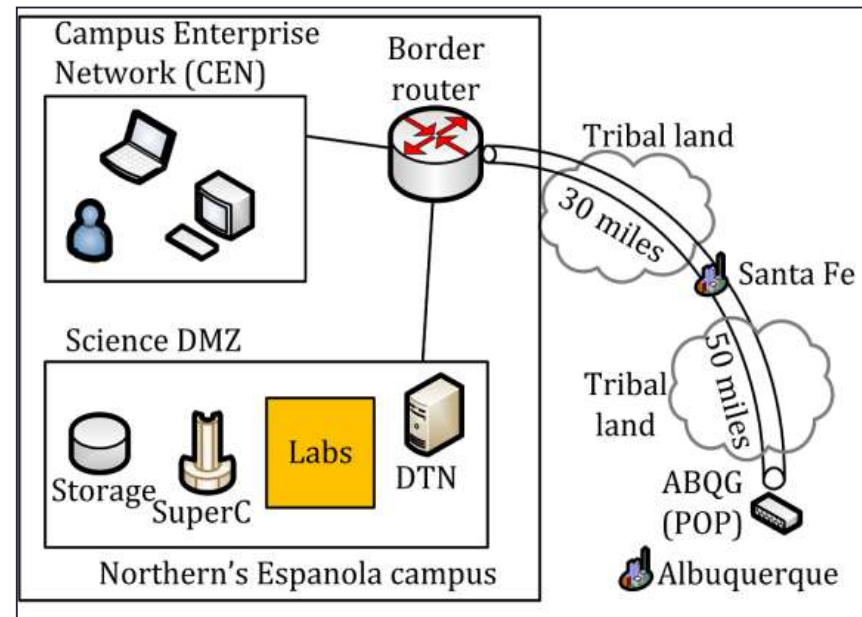
Northern New Mexico College

- A rural college located in Espanola, New Mexico (NM)
- Student population of 75% Hispanics and 15% Native Americans (only higher education institution in NM designated as Hispanic and Native American-serving)
- First designated community college of NM, transitioned to a dual-mission institution in 2005
- “Under-resourced” institution; IT professional salaries ~ \$ 259,000
- Started offering bachelor degrees in STEM in 2008/2009
- No staff network engineer
- Partnership with University of NM



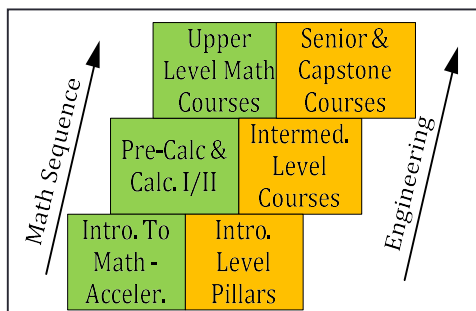
Northern's CC*DNI

- New border router to replace the older 100 Mbps capable Cisco 2800 series
- Upgrades to increase from 100 Mbps to 10 Gbps intra-campus transfers, from storage node / supercomputer to labs
- Science DMZ consists of aggregation switch and access switches, DTN and perfSONAR nodes
- Northern is negotiating with ISPs to increase the bandwidth from 100 Mbps to at least 1 Gbps
- Options include meter-based provider for Science DMZ traffic

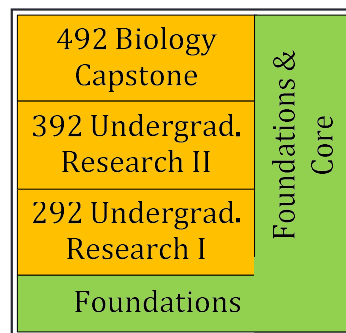


Challenges

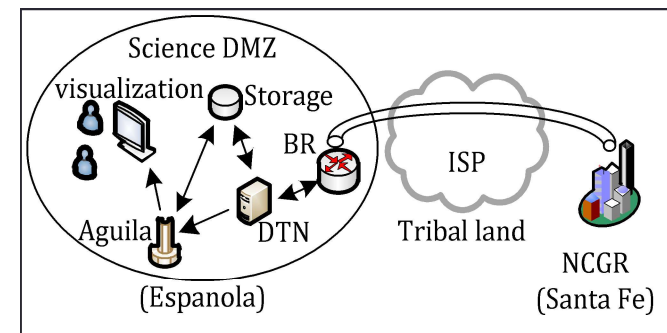
- IT must be engaged; faculty engagement is challenging
- As a college with a community college structure, even undergraduate research is challenging, because of the heavy teaching load (four classes per semester)
- Having faculty from Science and Engineering as PI / Co-PIs helps promote the use of Science DMZ (tenure-track)
- Academic leadership should recognize the effort of faculty members who incorporate undergraduate research and hands-on lab activities in the curriculum



Engineering program



Biology program

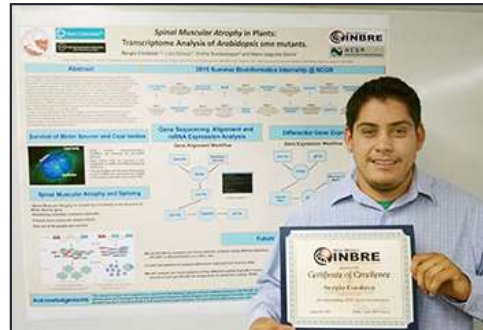


NCGR: National Center for Genome Resources

Drivers – Use Cases 2016



Edgar's second place presentation, among more than 90 research works at NM ANM conference



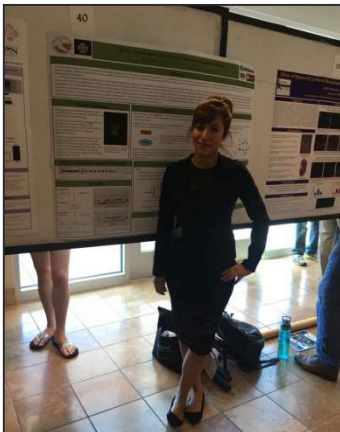
Sergio receiving the first place award during the 2016 Symposium by UNM and NM-IMBRE.



Gabiella (left) at the Neuroscience Initiative at UC Davis



Britney (center) at the 2016 NM Annual Biomedical Research Symposium



Maria presenting her work. She obtained 2nd place at the 2016 Undergraduate Research Symposium at Colorado State



Dr. Izaguirre-Sierra and students at NM-IMBRE 2016 Conference. Alma (center) is now at a PhD program at Chapman



Dr. Ricoy recognized at San Juan College for fostering undergraduate research experiences impacting Native American students



Jason while not working on his OO programming assignment