Tribal College and University (TCU) Demographics

- **37 TCUs** – More than 75 sites in U.S. – 16 States
- Serving 130,000+ AI/ANs through academic and community education programs.
- TCU students come from over 30 states
Strong sovereign Tribal Nations through excellence in **TRIBAL** higher education
AIHEC Cyberinfrastructure Study

**Major Goals**

**Comprehensive Examination of CI at the TCUs**
- TCU Site visits
- EDUCAUSE Survey customized for TCUs
- CI reports with recommendations to TCU presidents and IT directors

**IT/CI Capacity-Building at the TCUs**
- Community of IT Practice
- Regional partnership facilitation
- Annual IT Directors meetings
  - Monthly webinars
Project Focus Areas

- **Campus infrastructure:** Internet connectivity, connections to local and regional networks, Internet2
- **IT personnel:** training, collaboration with other TCUs, and develop skills for CI operations and management needs
- **STEM programs:** current and anticipated demands for CI-enabled resources (e.g. research collaborations, data acquisition, instruction)
- **Strategic planning:** current status of CI planning and resource allocation
- **Faculty capacity:** development and support needs to optimize/generate demand for CI resources for education and research
TCU Site Visits (34 TCUs to date)

Technical Track

Comprehensive review of the status of the TCUs’ physical systems and their management

X 35 Accredited TCUs =

Management Track

Review of user community/program issues based on campus stakeholder focus group meetings
# General Observations

Three categories of CI Readiness/Capability

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<tr>
<th>Category A</th>
<th>Category B</th>
<th>Category C</th>
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<tr>
<td>• Offer AS, BS and MS degrees</td>
<td>• Offer AS and BS degrees</td>
<td>• Offer STEM courses as part of general education requirement but no STEM degrees</td>
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<td>• Faculty with NSF-funded research projects and programs</td>
<td>• History of NSF TCUP funding</td>
<td>• Not likely to have history of NSF awards</td>
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<td>• Students have REU opportunities</td>
<td>• Limited research activity by faculty</td>
<td>• Basic IT challenges must be addressed before investment in CI</td>
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<td>• IT issues not a significant barrier to developing and accessing CI resources</td>
<td>• Student research opportunities generally off-campus</td>
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IT issues may present barriers to accessing CI.
Technical Observations

• TCUs have relatively low internet connectivity compared with other institutions
  Average TCU Campus Connectivity: 336 MB
  Average connectivity based on 2015 EDUCAUSE Survey:
  • AA/AS degree granting institution: 513 Mbps
  • MA/MS degree granting institution: 3.3 Gbps
  • BA/BS degree granting institution: 3.5 Gbps

• Limited financial resources resulting in IT budget challenges

• Relative isolation from larger higher education IT community

• Over-reliance on vendors for equipment installation, configuration

• Cybersecurity vulnerabilities

• Hardware refresh cycles longer than generally accepted practice
Next Steps
Single Vision

Align IT/CI with fundamental mission of TCUs: Tribal Nation-building and sustaining traditional language and culture.
IT Capacity-building

- IT strategic planning support
- Facilitate access to reliable and impartial (vendor-neutral) technical assistance in acquisition and configuration of systems
- Identify group purchasing opportunities for favorable pricing of hardware and software licenses involving multiple TCUs
- Professional development for IT staff
- Encourage engagement with and generation of new ideas, technologies
TCU Cyberinfrastructure Planning

• Encourage significantly higher prioritization of IT department needs in college budgets, even given resource challenges

• Align IT staffing with infrastructure operation and management requirements

• Address network design, hardware upgrades and configuration issues

• Bring infrastructure in closer alignment with academic program needs
IT staff Training & Professional Development

• Provide general professional development opportunities based on TCU identified needs and priorities
• Take advantage of economies of scale in making training events available to all TCU IT staff
• Training needs assessments
• Staff-level networked improvement communities (NICs)
Growing STEM/CI Partnerships

Create/strengthen connections with national/regional CI resources

- Regional Networks
  - Northern Tier Network Consortium
  - WestNet
- Texas Advance Computing Center (TACC)
- Open Science Grid (OSG)
- Higher education institutions with existing relationships with TCUs
- Strengthen TCU IT CoP to include non-TCU partners
Want to partner?

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