Cyberinfrastructure Strategic Planning
At
Tribal Colleges and Universities
Internet2 Community Exchange
May 2023
Overview

• The panel will provide:
  • An overview of the process,
  • Background on the participating schools
  • Discussion on the benefits and challenges associated with the planning process.
  • Discussion on if this process is sustainable within the Tribal College community and scalable to other smaller institutions of higher education.
Panelists

- Wendy Huntoon, AIHEC CI Team Consultant
- Al Anderson, CIO, Salish Kootenai College
- Chad Davis, CIO, Turtle Mountain Community College
- Paul Schopis, AIHEC CI Team Consultant
Cyberinfrastructure Strategic Planning Process

• In 2021, NSF funded (NSF 2018975) AIHEC to develop a pilot program on Cyberinfrastructure Strategic Planning (CISP) for Tribal Colleges and Universities (TCU) nationwide.
  • The program engages with a TCU Response team led by the campus IT director and including lead stakeholders.
  • Process includes:
    • Baseline campus assessment
    • Assessment summary
    • Maturity gap analysis
    • Campus CI recommendations
    • Draft strategic plan

• AIHEC CISP Team
  • AIHEC CI Team Staff: Alex Grandon
  • AIHEC CI Team Consultants: Dale Smith, Wendy Huntoon
  • Consultants: John Moore, Paul Schopis, Patrick Schmitz
### AIHEC Cyberinfrastructure Strategic Planning Process Overview

#### Overview and Introduction
- **TCU:**
  - Overview meeting with AIHEC
  - Receive planning preparation documents
  - Introduce Consultant Team and the Campus Assessment Tool

**ESTIMATED TIMELINE:** ONE DAY

#### Objective 1: Project Initiation and Campus Assessment
- **TCU:**
  - Identify and recruit TCU Response Team
  - Develop list of broad stakeholders
  - Determine TCU process for campus assessment

**ESTIMATED TIMELINE:** TWO WEEKS

- **AIHEC Consultants:**
  - Assist TCU Response Team with assessment planning

#### Objective 2: Complete the Campus Assessment
- **TCU Response Team:**
  - Initiate and complete campus assessment
  - Engage AIHEC Team as needed
  - Provide AIHEC Team the completed campus assessment

**ESTIMATED TIMELINE:** THREE WEEKS

- **AIHEC Consultants:**
  - Support Response Team Campus Assessment
  - Engage in stakeholder conversations (as needed)
  - Identify potential TCU community outreach candidates

#### Objective 3: Analysis and Plan Development
- **AIHEC Consultants:**
  - Review TCU Campus Assessment and develop gap analysis and recommendations
  - Refine TCU planning documents with TCU Response Team
  - Introduce CI Strategic Plan template
  - Support TCU drafting CI Strategic Plan

**ESTIMATED TIMELINE:** FIVE WEEKS

- **TCU Response Team:**
  - Review and refine planning documents
  - Draft CI Strategic Plan, refine with campus leadership

#### Objective 4: CI Strategic Plan Approval and Implementation
- **TCU Response Team:**
  - Deliver Strategic Plan to TCU leadership and stakeholders, with recommendations for implementation and reporting
  - Work with key stakeholders to implement plan

**ESTIMATED TIMELINE:** FOUR WEEKS

- **AIHEC Consultants:**
  - Support TCU Response Team in Strategic Plan presentation to leadership
  - Remain available for ongoing engagement during implementation

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**AIHEC**

TRIBAL Colleges and Universities: Educating, Engaging, Innovating, Sustaining, Honoring
## CI Strategy Planning
### Tribal College Participants and Status

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Salish Kootenai College

Campus Profile:
- Main campus located in Pablo, Montana
- 723 Students
- 280 faculty/staff

IT Highlights:
- Ten IT Staff Members
- 1Gbps Internet connection by the University of Montana
- Google gmail is used for Email
- Active Directory has credentials for students, faculty, and staff, but isn’t used for authentication for many systems
- Jenzabar hosted on site is the campus ERP system
- Campus network based on HP/Aruba

Campus Science Drivers:
- $6,936,710 in active NSF awards (Nov 2019)
- Bioinformatics and genomics are a strength
- Indigenous research and worldview methodologies
- Developing native American STEM faculty and teachers

IT Challenges:
- Some fiber is direct buried OM1
- Wireless coverage needs improvement
- Campus network based on cascaded network switches
- Multiple password stores causes confusion among users
Turtle Mountain Community College

**Campus Profile:**
- Main campus located north of Belcourt, North Dakota
- Seven remote sites
- 573 Students
- 179 faculty/staff

**IT Highlights:**
- Seven IT Staff Members
- 250Mbps Internet connection from the State of North Dakota
- Gmail is used as the campus email system
- Active Directory with credentials for students, faculty, and staff are used for authentication to all of the college systems
- Jenzabar on local VMware cluster is the campus ERP system
- Campus network is Cisco, but they are looking at alternatives

**Campus Science Drivers:**
- $698,812 in active NSF awards (Nov 2019)
- Cybersecurity program
- Collaborative PEEC award with NDSU

**IT Challenges:**
- Campus network is not subnetted
- Wireless network coverage could improve and should be configured to use WPA2 Enterprise authentication
- Connectivity to remote sites could be improved
- Generator power quality is not sufficient for UPS systems
Is CISP Process Transferable to Other Small Institutions?

- Assessment documents are not specific to the TCU community
  - Can be used as a basis for Cyberinfrastructure Strategic Planning at other organizations.
- Current process includes modifying the assessment documents and processes based on the needs of the individual organizations.
  - Provides flexibility to tailor to different environments.
- Templates for foundational documents
  - Assessment Analysis, Gap Analysis, Recommendations and resulting Strategic Plan.
Lessons Learned

• Supporting Individual Organizations
  • Education on role and importance of organizational strategic plans.
    • Staff turnover, lack of experience in developing a strategic plan.
  • Must match the schedule and cadence of each organization.
    • Academic schedule – campuses are very busy at the begin and end of the semesters.
  • Staff support and buy in is critical
    • Campuses often have small staffs, so must work the process and activities around operating constraints.

• Relationship Development
  • With the AIHEC consulting team
  • Within the campus itself
    • Building relationships between IT department and other campus departments.
    • Understand where interests are aligned with respect to cyberinfrastructure.
Panel Discussion

• What were the motivations to participate in the AIHEC CISP process? (Campus)

• Did you have any reservations participating in the process? (Campus)

• Is there an outstanding issue or challenge you are hoping to address through your strategic plan? (Campus)

• What kinds of data is the CISP team collecting and how does the Baseline Assessment instrument organized/work? (CISP)
Panel Discussion

• Were there any additional questions you wanted added to the Baseline Assessment or were there any areas of enquiry you were not interested in collecting? (Campus)

• Were there any surprises that came out of the data collection effort? (Campus/CISP)

• In the stakeholder data collection effort, what were the challenges?
  • What worked, what didn’t? (Campus/CISP)

• Did this process meet your expectations and provide meaningful recommendations? (Campus)
Thank you!
Little Priest Tribal College

Campus Profile:
- Two campuses, Main in Winnebago, Nebraska. Small campus in Sioux City, Iowa
- Two remote sites in town
- 130 Students
- 42 full-time faculty/staff with many open positions

IT Highlights:
- Two IT Staff Members
- 200Mbps Internet connection from Network Nebraska
- Microsoft Office 365 is used for Campus Email
- Active directory has accounts for students, faculty, and staff
- Campus Cafe is the ERP system
- Campus network is based on Cisco

Campus Science Drivers:
- No active NSF awards (Nov 2019)

IT Challenges:
- Campus network not hub and spoke
- IT needs a building (current building has structural issues and lack of storage space)
Nebraska Indian Community College

Campus Profile:
- Three campuses with the main campus in Macy, Nebraska
- 250 Students
- 61 faculty/staff

IT Highlights:
- One IT Staff Member
- 100Mbps Internet connection from Network Nebraska
- Office 365 is the Campus email
- Active directory with credentials for students, faculty, and staff
- Extensive use of video conferencing
- Campus ERP is a combination of Abila fund accounting, Microix human resources, and EMPOWER student information system
- Campus network is based on older Cisco and 3Com

Campus Science Drivers:
- No active NSF awards (Nov 2019)

IT Challenges:
- Need redundant fiber for internet outages
- Wireless is based on consumer grade hardware at 2 campuses
IT Highlights:
- Three IT Staff Members
- 200Mbps Internet Service from Triangle Communications
- Campus Email: Office 365 hosted in the cloud
- Active directory with credentials for students, faculty, and staff
- Student system is Empower with Aliba HR and Payroll
- Campus network based on HP/Aruba

Campus Science Drivers:
- $6,595,526 in active NSF awards (Nov 2019)
- Total of four current awards all in the TCUP program
- One $3.1M TEA Center award focused on water quality research and education
- USDA NIFA Water Quality Research Grant

IT Challenges:
- Campus network not subnetted
- Internet bandwidth not sufficient
- Horizontal cabling in poor shape
- Staff needs training in Active Directory and cybersecurity
- Not using WPA2 Enterprise on wireless

Campus Profile:
- Located in Harlem, Montana
- One campus
- 150 Students
- 56 faculty/staff