



Cyberinfrastructure Strategic Planning At Tribal Colleges and Universities

Internet2 Community Exchange
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TRIBAL Colleges and Universities: *Educating, Engaging, Innovating, Sustaining, Honoring*

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



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Cyberinfrastructure Strategic Planning Process

- In 2021, NSF funded (NSF 2018975) AIHEC to develop a 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



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AIHEC Cyberinfrastructure Strategic Planning Process Overview

<i>Overview and Introduction</i>	Objective 1: Project Initiation and Campus Assessment	Objective 2: Complete the Campus Assessment	Objective 3: Analysis and Plan Development	Objective 4: CI Strategic Plan Approval and Implementation
<p>TCU:</p> <ul style="list-style-type: none"> • Overview meeting with AIHEC • Receive planning preparation documents • Introduce Consultant Team and the Campus Assessment Tool <p>ESTIMATED TIMELINE: ONE DAY</p>	<p>TCU:</p> <ul style="list-style-type: none"> • Identify and recruit TCU Response Team • Develop list of broad stakeholders • Determine TCU process for campus assessment <p>ESTIMATED TIMELINE: TWO WEEKS</p> <p>AIHEC Consultants:</p> <ul style="list-style-type: none"> • Assist TCU Response Team with assessment planning 	<p>TCU Response Team:</p> <ul style="list-style-type: none"> • Initiate and complete campus assessment • Engage AIHEC Team as needed • Provide AIHEC Team the completed campus assessment <p>ESTIMATED TIMELINE: THREE WEEKS</p> <p>AIHEC Consultants:</p> <ul style="list-style-type: none"> • Support Response Team Campus Assessment • Engage in stakeholder conversations (as needed) • Identify potential TCU community outreach candidates 	<p>AIHEC Consultants:</p> <ul style="list-style-type: none"> • 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 <p>ESTIMATED TIMELINE: FIVE WEEKS</p> <p>TCU Response Team:</p> <ul style="list-style-type: none"> • Review and refine planning documents • Draft CI Strategic Plan, refine with campus leadership 	<p>TCU Response Team:</p> <ul style="list-style-type: none"> • Deliver Strategic Plan to TCU leadership and stakeholders, with recommendations for implementation and reporting • Work with key stakeholders to implement plan <p>ESTIMATED TIMELINE: FOUR WEEKS</p> <p>AIHEC Consultants:</p> <ul style="list-style-type: none"> • Support TCU Response Team in Strategic Plan presentation to leadership • Remain available for ongoing engagement during implementation



CI Strategy Planning Tribal College Participants and Status

TRIBAL COLLEGE	PLANNING PROCESS STATUS
Turtle Mountain Community College	CI Strategic Plan Approval and Implementation (5)
Little Priest Tribal College	CI Strategic Plan Approval and Implementation (5)
Aaniiih Nakoda College	Analysis and Plan Development (4)
Nebraska Indian Community College	Complete Campus Assessment (3)
Salish Kootenai College	Project Initiation and Campus Assessment (2)
Southwestern Indian Polytechnic Institute	Project Initiation and Campus Assessment (2)
Northwest Indian College	Project Initiation and Campus Assessment (2)
Lac Courte Oreilles Ojibwe University	Project Initiation and Campus Assessment (2)
Institute of American Indian Arts	Project Initiation and Campus Assessment (2)
Ilisagvik College	Overview and Introduction (1)
Fond du Lac Tribal and Community College	Overview and Introduction (1)



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Campus Profile:

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



SALISH KOOTENAI COLLEGE

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



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 !



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Supplemental Documents



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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)

LITTLE PRIEST TRIBAL COLLEGE

OUR MISSION: "BE STRONG AND EDUCATE MY CHILDREN"

IT Challenges:

- Campus network not hub and spoke
- IT needs a building (current building has structural issues and lack of storage space)



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

Campus Profile:

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

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