

## MONTANA INDIAN TECHNOLOGY AND CULTURAL HERITAGE (TeCH) LEARNING CENTERS

*“Historically, new technologies have been destructive to our Native cultures. You can't hold back technological advances, so our challenge as Indian people is to use these emerging technologies to strengthen our communities and help retain our cultural heritage.... We need to look at how to use existing technologies to strengthen our culture--to use them in more and more clever ways.”*

Don Thornton, Cherokee entrepreneur, as quoted in *Winds of Change*, Winter 2001

### **Project Purpose**

American Indians constitute the largest recognized minority group in Montana. The US Census estimates that in [1999, Montana was home to more than 55,600 American Indians, or 6.3% of the state's total population. That percentage places Montana fifth in the U.S. with respect to percentage of American Indian population].

Montana is home to seven reservations and tribal colleges, more than any other state. Reservation communities are located in rural and geographically isolated regions of the state and, at least in part because of this isolation, unemployment ranges from 27 to 79 percent. Close to 50 percent of Montana Indian families are reported to be living at or below the poverty level (vs. 14 percent for all Montanans). Educational achievement also lags far behind, with less than 60 percent of American Indian high school students reaching graduation and only 3 percent American Indian college students earning a degree.

For the last six years, the Burns Telecommunications Center at Montana State University has worked with leaders at Montana's tribal colleges on building computer networks and integrating information technologies into the infrastructure of the colleges and their reservation communities. Programs have included hands-on training for educators, intensive technical skill building to ensure that schools and colleges have the technicians needed to support computer-based technologies, and education and outreach into the communities. This extensive outreach has been successful in integrating information technologies into the basic fabric of higher education, but Native Americans living in reservation communities have yet to fully utilize these new technologies.

For tribal colleges and communities to benefit from the economic, educational, and cultural resources available via information technology -- and make their own contributions to it -- investment needs to be made not only in physical resources, but in the human resources needed to integrate information technologies into the community. And community residents have to develop and invest in the vision of how these technologies can improve their day-to-day lives. As demonstrated by the MIT Media Lab and others, when individuals from underserved communities move from being simple consumers of technology to becoming producers of new computer-based materials, and are able to use these new technologies in a cultural context, they often become advocates of change and adaptation of those technologies.

One way to speed up the process of adaptation and to enhance the use of these technologies on

American Indian reservations is to respond to real-world, community-based opportunities. Such opportunities can be built upon to expand the use and meaning of new technology so that individuals are introduced to them in the full context of their rich heritage, rather than in cultural isolation.

### **A Unique and Timely Opportunity**

The American Indian Higher Education Consortium (AIHEC) recently provided funding to support the development of Field Museums and Cultural Centers at tribal colleges. As part of the AIHEC project, 30 tribal colleges around the country were provided with funds and donated building materials to develop and construct temperature-controlled facilities to house tribal artifacts, to preserve and share tribal history, culture, and language and, as a result, to help enhance tourism. The funding and materials provided by AIHEC support the construction of a building, under the assumption that the tribal colleges and their communities will in turn develop the cultural content for their Field Museums. As one Montana tribal leader noted, this leaves many tribes building rich, but content poor, unable to repatriate large holdings of tribal artifacts held by national and international museums.

It has also been noted that although beadwork and other physical artifacts are certainly an important part of a tribe's history, there is much more to Indian culture than clothing, artwork, and early tools and arrowheads. Language, science, music, dance, stories, and historic sites all contribute to a better understanding of a nation's history and culture. Fortunately, new multi-media technologies provide opportunities to capture and share the “whole story” of a tribe's history and culture, using formats which can appeal to all members of the community, especially younger people who desire more information and more contemporary presentations. Museums around the world, reluctant to return their extensive collections of artifacts to the tribes, might also be willing to make “electronic donations” to share their collections if such a “digital preservation program” were developed.

The technologies exist to begin the process of preserving these stories from the past. Now is the time to introduce these technologies into reservation communities given that many of the tribal elders with a connection to the living history of their tribe and a knowledge of language, music, and song will soon be gone. And, by engaging a wide variety of individuals of all ages, there is a unique opportunity to integrate network and computer-based technologies into the community in a meaningful way, developing the necessary skills in the process, and serving as a model for other community businesses to use for other informational types of websites (e.g., websites for traditional craftspeople, artists, photographers, and other small businesses).

### **How this Proposal will Contribute**

The Burns Telecommunications Center proposes to establish Technology and Cultural Heritage Learning Centers on four Montana reservations. These hands-on training centers will provide reservation residents with the training and equipment needed to use new technologies and then will provide them with opportunities and technical support to capture and preserve the history, stories, and other cultural resources

of their tribes. Community members of all ages (from students to retirees) will be encouraged to participate in this process. The resulting materials will be formatted as “cultural modules” and shared with the community and tourists in kiosks in the new Field Museums and other community sites, thus providing a meaningful repository for the materials produced as a result of a community-wide training technology program.

## **Outcomes Expected**

It is envisioned that the TeCH Learning Centers will result in a greater understanding of the use and benefits of information technologies, and that the project will demonstrate how these technologies can be used to support and preserve Native cultures and communities rather than seeing them as suspect or, worse, as inherently destructive to language and culture.

And, by targeting multi-generational teams of learners, it is expected that the elders of the tribes will feel more comfortable with technology, and translate that comfort to other members of their communities, while the students and young people working with them will develop their own technology and leadership skills, completing projects with a meaningful sense of accomplishment and contribution to their communities. This multi-generational human infrastructure will serve as an agent of change within the test communities.

This project will leverage resources, such as Tribal College space, improve faculty skills, improve technology use in classrooms and create opportunities for student internships. As important, by linking hands-on training, education and outreach to the development of virtual materials for the Field Museums, reservation residents will have a meaningful project to contribute to as they learn new technologies in a cultural context. The resulting Field Museums kiosks, where this new information will be shared, along with hands-on training centers in the four communities and at senior citizen centers, will be lasting resources for the community.

## **Community Profiles**

The project will work with four reservation communities, all of which are relatively isolated economically and geographically (see map) and all of which have similar economic and educational profiles. In addition, all four are similar to the other three reservations in Montana and to many of the other reservations throughout the western part of the United States.

The Northern Cheyenne Reservation is located in southeastern Montana. It covers 445,000 acres and is bounded on the east by the Tongue River and on the west by the Crow Reservation. The total tribal enrollment is 6,479, with approximately 4,064 Northern Cheyenne living on or near the reservation. The total labor force of the reservation is 1,218 and the unemployment rate is 31.4%. The per capita income is \$4,479. Approximately 62% of the tribal members have a high school diploma and 5.6% have a Bachelor's Degree or higher. The TeCH Learning Center will be established on the campus of Dull Knife

Memorial College in Lame Deer, the tribal headquarters.

The Crow Reservation is home to the Crow people. The reservation is located in south-central Montana, and is bordered on the south by the state of Wyoming, and on the northwest by the city of Billings, Montana's largest metropolitan area. Approximately 76% of the 9,024 enrolled members live on the Crow Reservation. The total labor force on the Crow Reservation is 1,546. The unemployment rate is 44%. The average per capita income is \$4,243. Approximately 69.8% residents have a high school diploma and over 6% have a Bachelor's Degree or higher. The TeCH Learning Center will be established on the campus of Pretty Eagle School, in St. Xavier. The community of St. Xavier is located in the most remote area of the Crow Reservation and sits along the banks of the big Horn River and near the Big Horn Canyon Reservoir, a prime fishing and recreational area in the region. Several cultural sites are located in this area of the reservation and the majority of the tribal members have extensive knowledge of the culture and history.

The Fort Belknap Indian Reservation is located in north central Montana near the Canadian border. The reservation is home to two tribes which operate under one central government. The two tribes are the Assiniboine and the Gros Ventre. The combined enrollment of the two tribes is 5,110. The tribal headquarters are located near Harlem. The total labor force on the Fort Belknap Reservation is 721 and the per capita income is \$4,536. The unemployment rate is 29.5%. Over 66% of the tribal members have a high school diploma and 6% have a Bachelor's degree or higher. The TeCH Learning Center will be established on the campus of Fort Belknap College in Harlem, the tribal headquarters

The Rocky Boy Reservation is home to the Chippewa Cree tribe. The reservation is located in north central Montana in the Bear Paw Mountains. The total enrollment is 4,701 with 3,056 living on the Rocky Boy Reservation. The total labor force on the Rocky Boy Reservation is 411. The unemployment rate is 72%. The per capita income is \$4,278. Over 64% of the population has a High School diploma and over 6% has a Bachelor's Degree. The TeCH Learning Center will be established on the campus of Stone Child College in Rocky Boy Agency, the tribal headquarters.

## **Innovation**

The TeCH Learning Centers Project starts with the assumption that until community members see a need for a technology, and can envision how those technologies can be used by and be valuable to them, there will be little success in introducing those technologies into the communities. Thus, this project proposes to introduce reservation residents to new information technologies as a means of meeting an existing need and to make a meaningful contribution to their community.

The TeCH Project builds upon the investment in --and lessons learned from -- training and educational programs conducted by the Burns Telecommunications Center, the tribal colleges, and others in reservation communities. These previous projects, funded by the Department of Commerce, the National Science Foundation, and others, have created a foundation of trained personnel in the community

and in the tribal colleges, individuals who can contribute to and help sustain training activities in their communities.

By taking advantage of an opportunity to contribute to something of real value to the community (i.e., the Field Museums and Cultural Centers on each reservation), the project can introduce technologies in a context. It can also serve as a model for other reservations and other technology-isolated communities. Staff will also work closely with organizers of other existing cultural programs (e.g., the summer cultural immersion summer program on the Northern Cheyenne Reservation) to encourage on-going creation of new materials for the Field Museum sites.

### **Diffusion Potential**

During the final year of the project, MSU will host a workshop for project participants from all four participating communities to develop a “best practices” document of the lessons learned during the project. This publication will be disseminated nationwide, including to all 30 tribal colleges currently developing Field Museums on their campuses. The approaches taken by these four reservations will provide an invaluable blueprint for other communities who will be encouraged to replicate the lessons learned to develop materials for their own museums to enhance collections of physical artifacts. It is also envisioned that the modules developed for the Field Museums will serve as examples for reservation businesses to use for other informational types of websites.

In addition, the Burns Telecommunication Center, working with the MSU public television station and film school, will attempt to secure additional funding to capture in broadcast-quality video the “story behind the story,” documenting the process of how new and emerging technologies can be used to preserve culture, language, and history on these four reservations. Because of the unique approach proposed, and the subject matter to be used for training purposes, we are confident that the process demonstrated will be of interest to a wider audience (i.e., outside just reservation communities).

### **Technical Approach**

The TeCH Learning Centers Project will establish a community-based learning center on each of the four reservations, along with a satellite computer center in the community senior center, and a kiosk in each of the Field Museums. The learning centers will include five networked high-end multimedia systems, hubs and printers. These systems will access the existing networks and will have Internet access through the campus infrastructure. In most cases this is through a T1 line. Dial-up Internet access will be provided at the senior citizen complexes through a local ISP. A scanner, digital camera, digital camcorder and Adobe Dynamic Media Collection Software housed at each of the Learning Centers for all multimedia projects developed at the site. All of the equipment will be purchased with a three year parts and labor warranty. The TeCH Learning Centers will be open to the public during regular business hours and regularly scheduled evenings, and staffed by a site coordinator and/or a technician.

Site coordinators will be hired to staff the TeCH Learning Centers. The coordinators will work

closely with BTC TeCH staff, will utilize student interns at the sites and will also train and assist community members. Training will be based on a train the trainer approach so that all courses can be taught by members of their community. An intensive four-day training session will be conducted at the Burns Telecommunications Center on the MSU campus for TeCH Learning Center coordinators. There will also be two three day training sessions each year at the BTC for the coordinators to reinforce and supplement their skills. Training will include hands on opportunities to work with the same equipment and software to be installed in the learning centers, along with advanced training on web page development, digitization of audio and video, creating QTVRs and panoramas, etc. BTC staff will also provide follow-up technical support as needed.

These coordinators in collaboration with the BTC staff who will spend extensive time at the centers during the start-up phase, will then offer a series of day and evening courses in MS Word, Excel, PowerPoint, the use of the World Wide Web, all of which will be complemented by more advanced courses in digitizing and preserving images and language/song. TeCH Learning Center courses will be open to learners of all ages and all segments of the community and will focus on demonstrating how technology can be used to preserve history, culture and language. They will also be relevant to small businesses, business development applications and technology in the classroom.

In addition, an after-school program will be targeted at young people from the schools and local boys and girls clubs and community elders. As part of the program, the students will learn the basics of the multi-media software tools they will use during the year to capture language, history, and culture. This “digital storytelling” builds on the oral traditions of tribes and will actively involve young people in a process (i.e., preserving the distant past) they might otherwise view as having little relevance to their lives. These multi-generational teams will meet at the training center and/or in the senior centers on the reservations over the course of the year, with students teaching the elders how to use computers, e-mail, and how to digitize family photos and artifacts. TeCH Learning Center staff will then work with these multi-generational teams to prepare modules for the Field Museum kiosk.

There will be two competitive mini-grants awarded to each site. These projects must be technology oriented, contain content that is culturally relevant and demonstrate a strong component for community sharing. Priority will be given to projects that are a collaborative effort. All community members are eligible to submit a proposal. Successful proposals will be selected by a selection committee that may consist of the Program Manager, the Program Multicultural Education Specialist, the Site Coordinator and the Dean of Cultural Affairs or other cultural committee member from each site. The goal of the mini-grants is to encourage on-going materials development by community members. All of the resources at the TeCH Learning Center and the BTC will be available for the award recipients.

The TeCH Learning Centers will also develop and maintain a community news website, to which members of the community can contribute calendars and other information. The website will also feature highlights of the learning center activities, along with documentation of its outreach activities (e.g., digital photos and other materials contributed by training center participants).

## **Applicant Qualifications**

The Burns Telecommunications Center (BTC) at Montana State University was established in 1993 to deliver educational programs and services to the people of Montana. Since that time, the BTC has developed new and innovative programs using interactive data, audio, and video technologies, many of which are considered national models. In 1996-1998, the Department of Commerce supported TIIAP project resulted in network training for all Tribal College network administrators, development of technology plans, community Internet training, and creation of multimedia projects by community members. Because of this and other successful training and outreach programs, the BTC has established strong working relationships with the tribal colleges and reservation communities in the state. It is this strong track record and excellent rapport that makes this proposal possible.

Terry Driscoll, BTC Information System Support Specialist, will serve as program manager. She will be the primary contact person for the grant and will be responsible for administering all of the day-to-day operations of the project including promotion, communication with Tribal Colleges, selection of tribal participants, scheduling of training and project development, technical support and trouble shooting, budgetary expenditures, equipment purchase, installation and integration on site, troubleshooting and monitoring of evaluation instruments. Terry has thirty years experience in the information technology industry and, for the last six years, has worked extensively with the information technology personnel at the tribal colleges in Montana.

Mike Jetty, Multicultural Education Specialist, will be responsible for working with the community tribal elders and other community members on the issues of digital preservation of their tribes historical, cultural and language resources. Mike is an enrolled member of the Spirit Lake Dakota Nation, and has more than ten years experience working in Native American education. Most recently he was the Title I Improvement/Indian Education Issues Specialist with the Montana Office of Public Instruction. In addition to extensive background knowledge regarding general Indian education issues/school improvement issues, Mike has detailed experience working in the teaching of Native languages.

Wendell Lefthand has been identified as the site coordinator in Lame Deer. He will work closely with the Project Manger, Multicultural Education Specialist and will have valuable suggestions for the site coordinators at each of the other sites. Wendell is an enrolled member of the Crow tribe and has family ties at both the Northern Cheyenne and Rocky Boy reservations. He has extensive experience creating web sites and teaching Native American youth computer skills such as building web pages, Microsoft Word and Microsoft PowerPoint.

## **Sustainability**

Each of the TeCH Learning Center sites will sustain the training centers after funding for the grant ends. The equipment purchased and materials developed through the grant funds will remain with each of the TeCH sites. Each site will have trained a minimum of three employees who can assist with continued

material development and technology training for the communities in which they serve.

## **Evaluation**

The TeCH project evaluation will include both formative and summative evaluation components, each guided by evaluation questions which are keyed to the projects goals, objectives and expected outcomes. Evaluation questions for the formative component are:

- What is the level of information technology awareness, access and use in the TeCH communities?
- What are the barriers to implementation and integration of technology?
- What is the quality of training and support for project participants?
- What is the level of community involvement in the TeCH project?
- What is the project's impact on Native American's willingness and ability to use information technology?

Several evaluation activities will be conducted to address these questions.

- Pre and post on-site observations and surveys will be conducted to assess technology awareness, access and use;
- Self-reported evaluations will be completed by all participants in training programs;
- Interviews will be conducted with a sample of TeCH project staff, participants and community members. These interviews will focus on perceptions regarding the barriers to technology implementation and integration; and the factors that most likely contribute to overcoming those barriers; interviews will also be conducted with individuals experiencing the digital project results as they are made available via the museum kiosks;
- Mini-case studies of projects and materials developed as a result of the TeCH project will also be used to assess the impact of the TeCH Learning Centers. Sample projects (including participants and TeCH staff) will be asked to keep a journal of the process that they used to identify project content, design the digital materials and perceptions of the final product.

Both formative and summative evaluation components of the TeCH program will be managed by the Project Director, in collaboration with the Director of Native American Studies at MSU. The project will identify and support a graduate student in Native American Studies to assist in the data collection and dissemination of evaluation materials. Evaluation findings will be reported to project staff through regular phone and email communication, as well as in formative memos and evaluation reports on an annual basis.