

1. Project Purpose

a. Project Definition

The University of Alaska Museum (Museum), the Delta-Greely School District (Delta), the Yukon-Koyukuk School District (Yukon-Koyukuk), University of Alaska Fairbanks Rasmuson Library (University Library), and the Fairbanks Public Library (Public Library) request funds for the project, *Museum Objects Library Interface Network (MoliNet)*. *MoliNet* is an electronic catalog of Museum objects that will link additional documentary material drawn from the University Library's unique collections on Alaska and the Polar Regions. This project will further enrich and materially strengthen the ability of the University library and Museum to work together for the benefit of our respective users.

MoliNet will be integrated into the University Library online catalog providing access to teachers, students, and learners of all ages across the state in a dynamic real time computer driven environment. *MoliNet* will expand educational services by targeting specific critical curriculum needs of teaching art, science, history, and culture in the Delta Greely and Yukon-Koyukuk School Districts. *MoliNet* will have the clear advantage that an entire learning resource will be presented in a visual and oral format. This presentation parallels the learning strengths of rural students, yet *MoliNet* supports the reading and writing literacy benchmarks students need at each grade level. Students will also be able to conduct primary community research using "Fox Fire techniques," i.e., interviewing Elders, mothers, and grandfathers about Museum objects, and then reporting and submitting this local knowledge so it can become a part of *MoliNet*. Students can then claim authorship to this knowledge, which can be a strong factor in student achievement.

The Delta-Greely district is approximately 8,000 square miles in area, and this region is on the state's list of distressed communities. The risk factors for educational failure include poverty, low achievement on standardized tests, alcohol and substance abuse, and language barriers in Athabascan and Russian. The Yukon-Koyukuk district is larger than Washington State, and 92% of the 550 students are Alaska Native. Although English is the first language for these students, remnants of Athabascan speaking patterns heavily influence the student's use of English, making an emphasis on visual learning critical to the curriculum. Difficulties are particularly noticeable in reading and writing, and both test profiles have low performance.

Both Delta-Greely and Yukon-Koyukuk districts have communities with strong family values, and parents want to pass traditional and subsistence knowledge and work ethic to their sons and daughters. It's difficult for parents to engage in their children's learning if they don't understand the classroom assignments, especially if they themselves have language barriers. Since *MoliNet* will be accessible at home, in classrooms, and at libraries, parents will be able to relate to its high visual content and can encourage student achievement because they can be included in the learning dialog about connecting traditional and contemporary values.

Alaska is geographically challenged because of the large landmass with a remote, small population base that has limited or no access to mainstream library and museum resources. This Museum is committed to reaching out to all Alaskans and creating community dialog about the understanding of Alaska's art, science, history, and culture. All our community evaluations, our long-term relationship with rural teachers, and a current NTIA-TOP project of developing technology networks in Fairbanks public schools indicate that *MoliNet* will be an effective teaching resource for addressing some of the barriers of literacy. The partner school districts will evaluate these learning resources to see if there is a correlation with higher achievement scores.

b. *MoliNet* Description

MoliNet will be the electronic hub of the Education Center, which will share with users an understanding of the nature of artistic creation, interpretation, and history from the perspective of

the Museum's archaeology, ethnology, history, and fine arts collections. *MoliNet* will include basic information about the collections as well as extensive supplemental interpretations using historical photos and films, rare maps, oral histories, and manuscript collections (See Appendix A). The delivery of this content across Alaska requires an innovative use of proven network technology; a partnership with libraries and schools, teachers and librarians; and an ability to purchase and/or upgrade the technology in our partner schools.

A typical catalog entry in *MoliNet* will highlight an object on exhibit and provide a Discovery Tour of 4-10 different ways of learning about the object using sound, interviews, images, music, text, film, and other Museum objects. For example, the painting, *Mt. McKinley*, by Sydney Laurence would include pertinent information about the artist. Additional learning resources about *Mt. McKinley* could include: 1) an animation / diagram about the formation of the Alaska Range from plate tectonics and earthquakes; 2) listening to a geographer discussing the history of why there are two place names for the mountain: Mt. McKinley and Denali (the name used by Interior Athabascans); 3) looking at photographs of alpine flora and fauna; 4) listening to oral history interviews from cartographers, mountain climbers, and Athabascan Elders. Teachers and Museum staff will develop Discovery Tours so that they follow Alaska Standards for Culturally Responsive Schools (Assembly of Native Educator Associations, 1998) and meet Alaska Content Standards.

MoliNet will be integrated into the Rasmuson Library online catalog, the same system used by the Alaska State Libraries, the University of Alaska Libraries, rural and urban schools, and most public libraries in Alaska. A student, teacher, or family in Delta or Minto will be able to access *MoliNet* as simply as any user searches for a library book. A word search of Mt. McKinley or Denali, for example, highlights a *MoliNet* icon indicating Museum reference material is available. When the icon is selected, *MoliNet* opens and directs the user to the Sydney Laurence painting and Discovery Tour.

c. Objectives and Outcomes

During the last two years, the Museum led a community consortium with the Fairbanks Public Library and several Interior Alaska Native and non-Native organizations. The Community Advisory Team for the National Endowment for the Arts initiative called *A Sense of Place (NEA initiative)* urged the Museum to development *MoliNet* as its next project because of the benefits it would provide to all life-long learners. Based on their recommendations, the *MoliNet* objectives are:

1. Integrate *MoliNet* into the Rasmuson Library database and *ViLDA*¹ web portal.
2. Use the Museum's community curation model (*NEA* initiative) to enhance participation by teachers, students, Elders, etc. in our partner village schools;
3. Collaborate with partner teachers in the planning, development, and pilot use of *MoliNet* to guide an improved understanding of the arts and humanities via a technology network;
4. Promote primary archival resources at the Rasmuson Library and work with partner teachers to add local resources collected by students;
5. Work with the statewide library consortium to ensure Internet portals through which our partner schools can access *MoliNet*.
6. Disseminate *MoliNet* as a National model for museums and historical societies integrating their collections metadata and interpretation within established library access portals.

¹ *ViLDA*=Alaska Virtual Library and Digital Narrative Project: A multi-institution effort to select, digitize, and make available on-line, significant Alaska related historic materials.

Upon reviewing countless museum electronic catalogs on the Web and in discussions with NTIA-TOP and Institute of Library and Museum Services program officers, we have come to the conclusion that there are no museums or libraries that have joined their resources in an online catalog as proposed in *MoliNet*. To our knowledge, this is the first proposal to integrate these kinds of resources. This is a challenging task considering the distances and the remoteness of our communities, but for Alaska it makes tremendous sense. Everyone benefits, rural and urban alike. *MoliNet* makes use of an existing statewide network that will greatly increase its productivity, but more importantly, it will help to reduce the technology divide that currently exists between our rural and urban communities.

The **measurable outcomes** of *MoliNet* will track the following statistics: 1) library online catalog usage; 2) Museum visits by groups when they visit Fairbanks; 3) reading literacy rate (standardized test scores) due to the high visual content of *MoliNet*; 4) adequacy of *MoliNet* format appropriate to rural schools; 5) quality of collecting at-risk traditional knowledge in partner schools communities.

2. Innovation

a. Efficient, effective, and successful approaches to accomplish goals and objectives

MoliNet has a modular design², enabling both expansion and adaptation. Resources, whether text, images, audio, or video, are entered into the Library reference catalog (Unicorn software and ContentDM data management system) used by the University of Alaska³. Museum staff and rural area teachers in the Delta Greely and Yukon-Koyukuk School Districts will write Discovery Tours (see Appendix A) based on curriculum objectives and available resources. Teachers and Museum education staff will use these tours as part of the curriculum to teach arts and the humanities. Teachers will also be able to access the catalog and create their own short Tours using any of the objects and archival material. This “teacher-made” tour can be saved for replay on demand by individual students or by the teacher. *MoliNet* users may also browse the catalog as a means of linking similar object or themes together. Just as the peoples of Alaska are connected in who we are, so are the collection resources. A Yup’ik spiritual mask could be linked to an Inupiat mask, and the white feathers of the masks may be linked to ptarmigan camouflage data and study skins from our Ornithology collection. Such teacher-designed Discovery Tours can be stored for replay on demand by the teacher.

b. Technology support for project and activity goals

Both the technology and the *MoliNet* design structure will provide easy access for those who can only visit the Museum virtually. Internet technology is rapidly changing the way teachers, students, curators, artists, and librarians communicate with distance users. And the use of technology networks will be the only way that additional statewide museum and cultural centers can join *MoliNet* to create even larger databanks of knowledge about Alaska.

c. Expanding institutional capacity

Located at the University of Alaska Fairbanks, the Museum is a major public and scholarly resource center whose mission is to acquire, conserve, investigate, and interpret specimens and collections related to the cultural, natural, and artistic heritage of Alaska and the Circumpolar North. Through education, research, and public exhibits, the Museum serves state, national, and international humanities and science programs. It develops and uses cultural, botanical, geological, and zoological collections as the basis for understanding past and present issues

² See the diagram on *MoliNet*, Tours, and Network in the attachments.

³ The Alaska State Library, Juneau Public Library, Barrow Public Library, and the Fairbanks School District Library also use this catalog.

unique to the North. Over seventy-five percent of the Museum's collections are humanities-related. Of its 1,000,000 plus objects, roughly 800,000 are held in Archaeology, Ethnology/History, and Fine Arts.

Our faculty curators, research associates, and students examine questions as disparate as the effect of rapid culture change represented in Alaska Native artifacts and the spread of infectious diseases by migratory birds. We are especially proud of our relationships with Alaska's Native communities, a relationship built and maintained through a long history of collaborative work on repatriation, exhibitions, and educational outreach. In addition, we actively provide technical assistance to smaller, rural museums and cultural heritage centers, and we continue to furnish excellent opportunities for lifelong learning – from kindergarten to graduate school and senior citizens.

MoliNet will expand the Museum's this institutional capacity and leadership in the following ways:

- 1) Develop community participation and leadership by assembling rural teachers, school administrators, UAF faculty, and discipline experts to discuss connections with Museum objects and additional documentary material drawn from the University Library's collections.
- 2) Promote and expand use of the Museum collections to virtual visitors
- 3) Collaborate with our partner teachers and students to assess, identify, and collect relevant materials that will help the interpretation of Museum collections.
- 4) Provide a state / national model for how other museums and libraries can create *MoliNet*.

These expanding activities permit the Museum to have an even greater educational role in schools and communities despite geographical constraints. By partnering with rural teachers and students, *MoliNet* ensures that the Museum resources are not only accessible, but also readily usable at appropriate grade levels for classroom and home.

MoliNet emphasizes an appreciation for individual experiences and backgrounds while highlighting the similarities, not the differences between cultures. This initiative provides an opportunity to formulate an educational change regarding the structure, content, and process for delivering arts and humanities into the schools. This means shifting cultural orientation from just teaching about the local culture to teaching **within** the culture using appropriate museum objects and technology (Alaska Native Knowledge Network, 1999).

The UA Museum is a principal center for learning, with extensive connections to state research and state communities. When Athabascan high school students at Huslia videotape the subsistence practice of fish camp, the Museum is in a position to guide the documentation, archive this valuable history, and make it available as a teaching tool from **within** the culture. *MoliNet* meets the interpretive needs of students because it assembles and curates knowledge about Alaska's cultural patrimony as guided by the teachers who help develop and pilot the materials. This is an example of a museum teaching model where diverse academia, curators, scientists, humanists, artists, and Alaska Native Elders lend their knowledge in the interpretation of ethnographic and historical objects and events. In return, *MoliNet* creates an exploratory framework for instruction, for research, and for understanding the complexities and relatedness of state art, history, science, and culture.

3. Community Involvement

c. Partnerships

The **Rasmuson Library** and **Fairbanks Public Library** are part of the long tradition of sharing resources and developing cooperative projects that offer reference services across the state. Most Alaskan libraries place a great deal of value in the idea that "Alaska is a Library," and a

statewide management of its collections serves the needs of its citizens, public schools, and universities. Major portals for Internet library users anywhere in the state are available on SLED and FairNet⁴.

The **Delta Greely School District**, established in 1976 as a Regional Education Attendance Area (REAA), is approximately 8,000 square miles in area (see Appendix B). Approximately 75% of the students at the Alternative High School qualify for the Free/reduced Lunch program; the number is 69.9% at the Elementary School, and 43.8% at the Delta Junction Junior/Senior High School. Unemployment is higher in the area than the rest of the state as is the poverty level, and income is considerably lower than the rest of the state (Alaska Dept. of Labor, *Alaska Economic Trends*, Nov. 2002). Big Delta is on the state's list of distressed communities recognizing the high poverty level of the population.

The risk factors for educational failure include poverty, low achievement on standardized tests, alcohol and substance abuse, and language barriers; and the dropout rate has not improved significantly in the last five years. When the University of Alaska Fairbanks closed its Delta Learning Center in the late 1980s, residents lost their only access to higher education.

The 2001 announcement of the selection of Fort Greely as the site for the ground-based missile defense installation project has dramatically improved Delta's outlook for the future. It now calls for rapid changes and intense construction activity, offering the promise of long-term higher-skilled jobs along with the pains associated with rapid growth. These will provide the basis for the projected doubling of school enrollments to approximately 2,000 by the year 2009 resulting in the District's aim to employ 12 new teachers by fall 2003.

The **Yukon-Koyukuk School District** is an REAA situated on the Alaskan interior banks of the Yukon and Koyukuk Rivers, and 92% of the students are Alaska Native. The area of the district is larger than the state of Washington, serving approximately 550 students in 10 different communities. The district offices are in Fairbanks, serving 11 schools K-12. Of these schools, Allakaket, Hughes, Huslia, Kaltag, Minto, Nulato, and Ruby all have poverty levels above 40% and achievement scores averaging below the 50th percentile. The percentage of students below the poverty line for the district is 33.6% (2002). Although English is the first language for Yukon-Koyukuk students, remnants of Athabascan speaking patterns heavily influence the students' use of English, making an emphasis on visual learning critical to the curriculum. Difficulties are particularly noticeable in reading and writing, both areas that are low performance areas for Yukon-Koyukuk students. High need schools appropriate for partnership in *MoliNet* include Huslia (middle school), Minto (5-6), Hughes (secondary), Allakaket (secondary), and the Raven (cyber) correspondence program currently has 386 K-12 students, but this figure will increase to 1,100 students with the closing of the Alyeska Correspondence Program.

b. Community Involvement

Extensive community reviews and assessments since the 1990s have established the need for a Museum expansion, which became a vital component of the University's capital campaign. These efforts identified the significance of the UA Museum as an important statewide center for learning that culminated in the capital campaign that raised \$35M for the Museum expansion, the largest private fundraising effort to date in the State of Alaska. As a result the various groups realized an overall Museum institutional identity with common goals and now have a stronger

⁴ SLED: State Library Electronic Doorway. FairNet: Fairbanks Alaska Internet Resource Network Education and Training. FairNet is a local area non-profit organization dedicated to the strengthening of communities through shared information and education in computers and technologies.

framework for their respective involvement. This community involvement has continued and is now part of standard Museum operation. The leadership includes the President of the University, Chancellor of UAF, and both US Senators. Capital campaign and support committees include local, statewide, and national representatives. Community volunteers contribute thousands of hours annually as education docents and collection affiliates, collections aides, Alaska Native advisors, research, and academic experts. Museum staff members have strengthened the Museum's institutional foundation by identifying and developing community dialog and participation as well as engaging in relationships and forming partnerships with local businesses. These include but are not limited to academic and research interests, public programs, tourism industry, and the military. Staff often travels to rural museums across the state to consult, to advise and contribute their professional expertise.

c. Support for End-Users

As with all Museum Education projects, a Community Advisory Team (Advisory Team) will work with the staff to best support end-users throughout the project. This team consists of the following representatives: 1) partner school teachers, curriculum, technology / multimedia specialist; 2) UAF Alaska Native Studies and Language Center faculty, Museum staff in Education, Exhibits, and Ethnology; University and Public Libraries; and 3) community specialists in rural education.

The Museum staff and the Advisory Team will support the end-users in the following ways 1) convene distance meetings every other month to review progress, 2) compile ongoing evaluations reports of student interest and progress in using online resources, and 3) provide professional development training in Delta and Fairbanks for the benefit of the partner school teachers. A travel budget has been proposed to meet this end-user support onsite; and 4) suggest changes as needed to ensure the catalog and Discovery Tours have clarity and accuracy prior to implementation.

MoliNet is also concerned with user support for students. The average elementary and middle school student today has been exposed to a relatively high level of technology, whether it has been in the form of television imagery, cellular phones, or computers. For these students there is much demand that their educational experiences surpass this rudimentary level. Those who do not have experience need enhanced contact with the technology. In addition, students will also be guided on the following technology protocols: 1) the appropriate and efficient use of technology to explore resource materials, 2) issues of copyright and plagiarism while using Internet sources; and 3) emphasis on using primary library source material for class research projects – the Internet is the starting place, not their final destination.

4. Evaluation and Dissemination

a. Formative – Summative Evaluation

The evaluation of *MoliNet* will include both formative and summative components. The formative evaluation will examine what happens as the partnership team implements the project and the summative evaluation will examine the project's outcomes. The evaluation will answer four questions: 1) is there a measurable increase in public access and use of linked Museum and Library resources? 2) Does the project increase teacher and library user visits to the Museum. 3) Do the project resources contribute to visual literacy of families in Alaska's largely Native and rural area communities? 4) Is the proposed level and form of technology used by the project both appropriate and adequate to the Museum, library, school and TOP goals?

The formative evaluation will document and be used to implement the project content digitization, development, and interpretation, delivery, access, and response. In doing so, it will describe who receives project services and if they were beneficial; the delivery of services and if

any problems occurred and how they were resolved; and whether the project matched the project goals.

The summative evaluation will examine the outcomes of the project. It will assess user access and goal satisfaction including comfort with technology, work, engagement level, and participation in project activities. The evaluation will describe audience interest and access to the state's cultural, art, science, and other educational resources. The summative evaluation will also examine how the partnership model can be increasingly adapted for further collaboration with rural Alaska communities and museum and library institutions across the state.

b. Dissemination

Information on *MoliNet* will be disseminated through several approaches: 1) Encourage schools, libraries, and museums to use *MoliNet* by developing relationships with teachers in other school districts and museum staff across the state; 2) Submit and distribute progress reports over the Internet to interested museums and schools across the state that reflect student perceptions and illustrate the benefits and pitfalls of using *MoliNet*; 3) Publicize *MoliNet* in local and state newspapers, on television and public radio shows, and write articles in professional journals; 4) Inform and train all teachers about how to use *MoliNet*; 5) Attend and present at state, national, and international conferences and personally introduce the *MoliNet* model to other museum and school educators. Key conferences include the Alaska Society for Technology in Education, National Art Education Association, Museums and the Web, Western Museums Association, and the American Association of Museums; 6) Link *MoliNet* to the Museum's Internet site and to popular web search engines.

5. Feasibility

a. Technical Approach

The Museum has consulted with representatives and technical staff with all the partners of this project to determine the compatibility and sustainability of *MoliNet*'s technology with the University and School Districts' networks. T-1 lines throughout the Delta Greely School District and the Yukon-Koyukuk School District will provide adequate bandwidth for this project. In fall of 2003, the Delta Greely Middle School will be rewired for Ethernet connectivity to all classrooms prior to reopening. The Coordinator of Technology in charge of this renovation will operate with *MoliNet*'s support in mind.

b. Applicant Qualifications

The Museum has extensive experience in collaborating with small museums statewide in the areas of interpretation, exhibit design, and museum-school partnerships. The Museum is also the recognized leader in the planning and development of collaborative projects with Alaska Native communities as well as with many federal and state agencies, private businesses, school districts, and non-profit organizations. The Museum is currently working with the Inupiat Heritage Center in Barrow to plan and install their new permanent exhibition, "People of Whaling" and to develop education outreach with the North Slope Borough School District. The Alaska Humanities Forum, the National Endowment for the Humanities, the National Endowment for the Arts, U.S. Environmental Protection Agency, the U.S. Department of Commerce NTIA, and the National Aeronautics and Space Administration have supported recent projects that contributed to *MoliNet*.

The University library serves the University and Fairbanks communities. The Fairbanks North Star Borough Public Library serves a broad cross-section of the community with a focus on families and children and through traditional library services, including technology partnerships with community agencies such as FairNet and the Fairbanks North Star Borough

School District. The holdings at each library complement one-another and together represent the primary research site for life-long learner information for Interior Alaska.

c. Schedule for effective completion of activities

See attached Schedule of Completion.

d. Sustainability

The idea that one successful model can be replicated elsewhere and continue through the long-term must take into account that the model will undergo changes. The biggest stumbling blocks to sustainability are that the model may be too grand in size or complex to maintain, or that it doesn't further a sense of success and interest for participants.

Regarding the sustainability of our proposed partnership, Project Zero (Harvard University) has recently finished a study of partnerships that suggests that surviving partnerships must meet or need specific criteria to continue. We feel Harvard's criteria are very applicable to this project. Their criteria include 1) Placing the needs of students and schools at the center of their mission; 2) Sharing deep personal commitments to the educational power of arts experiences; 3) Finding ways to regularly and substantively examine the work, the needs, and the challenges; 4) Embracing the need to listen, to learn, and to change; and 5) Requiring a broad base of ownership and investment.

The *MoliNet* model meets all five of the above criteria. It provides an open relationship between institutions and staff, gives an immediate sense of success that the model enhances student learning, and offers a broad understanding of the arts and humanities in the classroom.

6. Project Budget

a. Appropriateness of budget to completion of project activities

The greater parts of the *MoliNet* budget are directed towards project coordination, research, editing, advising, and object catalog and Discovery Tour development. Equipment needs for the project focus on those partner school sites that do not have appropriate in-classroom technology. Specialized tasks will require hiring of temporary project staff in addition to using consultants and technicians. The Museum, Fairbanks Public Library, and school partners have committed staff and teacher time as matching fund to the project. The Rasmuson Library has dedicated server space and maintenance, and technical assistance for the digitization and data-entry to this project. They have reserved space on their *ViLDA* ContentDM database for 3,000 images to originate from *MoliNet*. The University of Alaska's indirect costs enable adequate administrative support for data entry and budget management.

A continuing NTIA-TOP project between the Fairbanks Public Library and Museum (*Northern Journeys*), has funded part of our technology required for *MoliNet*. A percentage of this equipment will need to be upgraded in the second year of *MoliNet* through other funds. The Public and University Libraries have both under-gone extensive space renovations, and the Museum's expansion and new educational and gallery spaces will open at the conclusion of *MoliNet* in 2005.