



Sharing Our Pathways

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A newsletter of the Alaska Rural Systemic Initiative
Alaska Federation of Natives ♦ University of Alaska ♦ National Science Foundation ♦ Annenberg Rural Challenge

Teaching and Learning Across Cultures: Strategies For Success

by Ray Barnhardt

The following is the second of three excerpts from an article addressed to teachers who are seeking guidance on how to best enter a new cultural/community/school setting and make a constructive contribution to the education of the children in that setting. The final excerpt will be printed in the next issue of Sharing Our Pathways.

What do you need to know?

Since learning a culture is a lifetime undertaking, where do you, as a newcomer, start and what are the most important aspects to be considered? One of the first things to recognize is that the more you learn about another culture, the more you will find out about yourself. We all carry around our own subconscious culturally conditioned filters for making sense out of the world around us and it isn't until we encounter people with a substantially different set of filters that we have to confront the assumptions, predispositions and beliefs that we take for granted and which make us who we are. To illustrate how those differences can come into play, we've included a chart (see page 2) that summarizes some of the characteristics that tend to distinguish the view of the world as exhibited in many indigenous societies from that embodied in Western scientific tradition.

Differences in cultural perspective, such as those outlined in the chart on page two, have enormous implications for all aspects of how we ap-

proach the tasks of everyday life, not the least of which is the education of succeeding generations. In most indigenous communities today, it is

apparent that aspects of both the indigenous and Western perspectives are present in varying degrees, though neither may be present in a fully cohesive fashion. It is not necessary (nor is it possible) for an outsider to fully comprehend the subtleties and inner workings of another culture (even if it is still fully functional) to be able to perform a useful role in that cultural community. What is necessary, is a

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recognition that such differences do exist, an understanding of how these potentially conflicting cultural forces can impact peoples lives and a willingness to set aside one's own cultural predispositions long enough to con-

vey respect for the validity of others.

The particulars of an unfamiliar cultural system can be effectively attended to without a thorough knowledge of that culture, as long as you know how to make appropriate use of

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Indigenous World View	Western World View
Spirituality is imbedded in all elements of the cosmos	Spirituality is centered in a single Supreme Being
Humans have responsibility for maintaining harmonious relationship with the natural world	Humans exercise dominion over nature to use it for personal and economic gain
Need for reciprocity between human and natural worlds—resources are viewed as gifts	Natural resources are available for unilateral human exploitation
Nature is honored routinely through daily spiritual practice	Spiritual practices are intermittent and set apart from daily life
Wisdom and ethics are derived from direct experience with the natural world	Human reason transcends the natural world and can produce insights independently
Universe is made up of dynamic, ever-changing natural forces	Universe is made up of an array of static physical objects
Universe is viewed as a holistic, integrative system with a unifying life force	Universe is compartmentalized in dualistic forms and reduced to progressively smaller conceptual parts
Time is circular with natural cycles that sustain all life	Time is a linear chronology of "human progress"
Nature will always possess unfathomable mysteries	Nature is completely decipherable to the rational human mind
Human thought, feelings and words are inextricably bound to all other aspects of the universe	Human thought, feeling and words are formed apart from the surrounding world
Human role is to participate in the orderly designs of nature	Human role is to dissect, analyze and manipulate nature for own ends
Respect for elders is based on their compassion and reconciliation of outer- and inner-directed knowledge	Respect for others is based on material achievement and chronological old age
Sense of empathy and kinship with other forms of life	Sense of separateness from and superiority over other forms of life
View proper human relationship with nature as a continuous two-way, transactional dialogue	View relationship of humans to nature as a one-way, hierarchical imperative

(Adapted from Wisdom of the Elders, by Knudtson and Suzuki, 1992)

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local expertise and community resources. As you come to understand how another cultural system works, you will also be learning more about how culture influences behavior generally. The particulars of the new situation will lead to tentative generalizations in your own understanding which will help you decipher the next set of particulars. This should be a continuing cycle through which you learn as much about yourself as you do about others. Along the way you can expect to face some tough questions, like “Who am I?” and “Why am I here?”—questions that we rarely encounter in our own cultural worlds.

Two useful steps a new teacher can take to begin to see beyond the surface features of a new cultural community are getting to know some of the elders or other culture-bearers and becoming familiar with aspects of the local language. By visiting elders in the community, you will be showing respect for the bearers of the local culture, while simultaneously learning about the values, beliefs and rules of cultural behavior that will provide a baseline for your teaching. Showing enough interest in the local language or dialect to pick up even a few phrases and understand some of its structural features will go a long way toward building your credibility in the community and in helping you recognize the basis for local variations on English language use in the classroom. At no point should you assume, however, that you know everything you need to know to fully integrate the local culture into your teaching. When learning about another culture, the more you learn, the more you find that you don't know. Always assume the role of learner, so that each succeeding year you can look back on the preceding year and wonder how you could have been so naive. When you think you know it all, it's time to quit teaching. ♦

Village Science: Another Set of Laws

by Alan Dick

There are physical laws that govern the operation of the universe. These laws interact with each other, sometimes in harmony, other times in competition, always seeking equilibrium. To work with them produces efficiency. To work against them produces frustration. I might think I can elude the effects of friction. However, if I run my vehicle with no oil or dirty oil, friction will have its way and I will end up in a garage with a huge bill from the mechanic.

As a Western scientist who has lived among the indigenous people of Alaska for over 30 years, there is one big difference I see between Western science and the science as applied by indigenous people. Indigenous people acknowledge the fact that there are spiritual as well as physical laws that govern the operation of the universe.

Most Western scientists readily admit that there are forces influencing their own lives, yet many are reluctant to acknowledge the spiritual because it complicates the simple scientific model from which they derive security. The spiritual variable in every equation makes concrete conclusions difficult or impossible to attain.

Allow me to give a few simple examples. There is a spiritual law involving unity. When a group of people work together, the whole exceeds the sum of the parts. Minorities, sports teams and corporations all know that when people work together, there is a power that emanates from that unity that makes it very difficult to overcome. This is a spiritual law that operates whether we acknowledge it or not. When we bicker and fight, the whole is less than the sum of the parts. This also is true.

Another spiritual law says that you

have to give if you are going to receive. If you become like the Dead Sea, always taking in, but never giving out, you will spiritually become like that sea—dead. The indigenous people from my area have the custom of young men giving away the first animal of each kind they catch, whether it is the first rabbit, seal, moose or whatever. The young people learn to give and as they give, more animals come to them. However, if they are stingy, they will have difficulty catching animals in the future. Most people in the villages know this. It is a spiritual law—a principle.

These and other spiritual laws enter into the equations of our lives. While the indigenous people of Alaska have benefited greatly from Western science and technology. Westerners have been slow to grasp the simple spiritual laws that Native people have known and practiced for centuries. I have personally found that physical laws have measurable outcomes that are often immediate in result. Spiritual laws are more subtle in their outworking. We sow discord today. We might not reap the result for a month, year or a generation, but the result is as sure as action = reaction. The result is as sure as a satellite

(see “Village Science” page 15)

Yupiaq Mathematics: Pattern and Form in Space and Place

The Alaska Native people have always had a way of seeing and understanding patterns in the land (*nuna*) around them. They identified patterns in plants, rivers, weather, landforms, animals and the heavens. Upon the careful observation of patterns, they were able to make predictions for the future. This critical analysis involved the past histories, the present conditions and thus presented sensemakers for the future. This is the practice of ecopsychology at its finest. Everything that one needs to know about life and to seek freedom and happiness are found in Nature. As stated by Barry Lopez, the landscape becomes the mindscape and the mindscape becomes the landscape (1986).

For Yup'ik people, according to elders Joshua Phillip and Fred George, the various parts of the body were their measuring instruments. The outstretched arms became the measure for the length of a fishing net. The closed fist defined the opening of the blackfish trap. Other units of measure, such as one arm's length, the distance from the elbow to the tip of the index finger, the span between the thumb and index finger extended, stepping off to mark the diameter of the *qasgiq* and various combinations of these became the units of measure for tasks such as making clothing, tools and shelter. Consequently, the clothing people wore and the tools needed for hunting and trapping were made precisely to fit the dimensions of the user.

The women used precise patterns for making parkas and mukluks. The parka required the maker to look at the body of the person for whom it was to be made and to visualize proportions in body form (including bone structure and musculature) and size

in order, for instance, to determine the number of ground squirrel skins needed. In sewing together the skins, the sewer is reminded of the family history of the patterns, tassels, decorative designs, and the use of various furs, taking advantage of their beneficial qualities.

The Alaska Native people also had a numbering system (Lipka, 1994). For the Yupiat people, their numbering system used a base of twenty. Ten fingers and ten toes are needed to make a complete person. The digits are attached to appendages which are in turn attached to the body. The counting system was necessary for determining the number of furs needed to make an article of clothing. For example, it takes 45 squirrel skins or six otter skins for a man's parka. For netmaking, special wooden measuring tools were constructed, again using body parts to determine the width for different species of fish. However, there was no need to count the precise number of dry fish to last the whole winter. This was done by

by Angayuqaq Oscar Kawagley

estimating how much storage area needed to be filled with fish to feed the family and dogs, provide for ceremonies and share with others. Always, they had to have food supplies beyond the immediate needs of the family. Sharing and reciprocity were key to their preparations. Thus, for the Yupiat people it was not necessary to quantify in precise numerical terms, but rather in proportional terms relative to size of family, time until next food supply would be available, weather conditions and nutritional uses of various foods.

The Alaska Native people had many geometric designs in the things they made such as utensils, fishtraps, weirs, clothing designs and ceremonial paraphernalia. Again, it was not necessary to quantify in terms such as surface area, degree, angle, volume and other numerical dimensions. Such information alone would be considered insufficient knowledge for you were also required to know the history of the design, its replication of a natural or spiritual form, the meaning of the color and the story behind the artifact.

The Alaska Native people also had no precise measurements for distance such as feet, meters and miles. Rather, distance was calculated qualitatively—measured more in terms of time and terrain than distance. The Yupiaq person would consider the mode of transportation, weather conditions, topography over which he would have to traverse, history of various sites that one would encounter along the way where food is available and, if traveling a great distance,

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where logical and safe rest areas were located. In considering the above, one can see that units of measure for distance alone would have rendered their knowledge incomplete and unreliable as a basis for moving from one place to another. The all-important knowledge of place would be lacking in the details that are necessary for the landscape to merge with the mindscape.

Space and time were thought of differently too. Space was a multi-dimensional place that the human, spirit and nature occupied at the same time. The self or consciousness was considered to be time and timelessness at the same time. One accomplished what needed to be done at the right time. There was a place and time for everything. Timing in drumming and singing was important, however there was no need for a metronome because it was implicit in the act itself. To pay attention to such a device would detract from the sacredness of song, beat, motion and story. The circadian rhythm of the universe was the sacred timepiece of the Native people.

Western mathematics and sciences, because of their emphasis on objectivity and detachment, introduce us to an abstract and lifeless world that has a tendency to set us apart from the rest of our relationships in the universe. However, with fractal geometry and the new sciences of chaos and complexity, the Western thought-world seems to be shifting from the quantitative and impersonal study of tangible "things" and is becoming more attuned to the qualitative dimensions as more and more of its members recognize the importance of inter-relationships (Capra, 1996). Western scientists constructed the holographic image which lends itself to the Native concept of everything being connected. Just as the whole contains each part of the image, so too does each part contain the makeup of

the whole. The relationship of each part to everything else must be understood to get the whole picture (Wilber, 1985). We are finally getting there.

There are many bright Native people who would make excellent elementary or high school teachers. Many of these students have problems understanding mathematics, in part because teachers don't themselves recognize it as another way of knowing with a language and logic of its own. We present mathematical abstractions as though the purpose was to practice the virtuosity of the human mind and its creativity and we lose sight of its practical applications. Native students often have trouble visualizing abstract mathematical constructs and their application to real life. Perhaps, we can overcome this problematic academic gatekeeper by introducing Native students to recognizing and understanding the patterns and forms in their own world through which they can visualize the problems and then move from qualitative to quantitative explanations. From the tangible we can go slowly into the intangible. The interest that such an approach can spark is evident in the work of the Inupiaq students from Kaktovik, who have created their own system for representing Inupiaq numerals (Bartley, 1997).

We are in a modern world which was described ably by Lewis Carroll in *Alice in Wonderland*: "Now, here, you see, it takes all the running you can do to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that!" New information is bombarding us from all quarters with entropy setting in and the decay of knowledge brings about confusion. It behooves us then to slow down and see what knowledge and information will help us to build the kind of world that we would like. What aspects of mathematics and the sciences will help free us from the

obsession with self and materialism? We can learn from the way our ancestors made sense of the world and used keen observation of patterns and form in relation to space and place to maintain balance between the human, natural and spiritual worlds. You see, our problem is a crisis of consciousness. Ralph Waldo Emerson once wrote, "Society is in conspiracy against the manhood of every one of its members. Society is a joint-stock company in which the members agree, for the better securing of his bread to each shareholder, to surrender the liberty of the eater." We experience resistance to making change in the world, but our efforts must continue with spirit and determination. ♦

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Athabascan Region

by Amy Van Hatten

As I plan for the new initiatives on *Village Science Applications and Careers* and *Living in Place* that are being implemented in the Interior region this year, I can't help but reflect on past performances. Much of the success in 1996 was the result of a joint effort comprised of dedicated contributors from diverse fields touching on math and science. A sense of place and direction will surface under the flourishing guidance from elders, UAF staff, the seven participating school districts, Fairbanks Native Association, Denakkanaaga, Inc., Cultural Heritage and Education Institute and Gaalee'ya Camp.

I would like to thank Paula and Lolly for their proficiency in putting together the *Sharing Our Pathways* newsletter, and I would like to invite any of the Interior members to submit an article in which you share some of your students' work in math, science, social studies or language arts. There are many exciting things going on.

The Athabascan Regional Elders Council known as "The Spirit Of Our Ancestors Cultural Review Board" has nine board members. They are: Avis Sam, Northway; Trimble Gilbert, Arctic Village; Catherine Attla, Huslia; John Andrews, McGrath; Hannah Solomon, Ft. Yukon/Fairbanks; Bertha Moses, Allakaket; Rita Alexander, Minto/Fairbanks; David Salmon, Chalkyitsik; Kenneth Thomas Sr., Tanacross and James Dementi, Shageluk. Alternates are Fred Alexander-Minto/Fairbanks, and Johnson Moses, Allakaket.

As Alaska RSI partners that represent the Interior, our first task is to maintain proper respect, mutual trust, loyalty, good people skills and an understanding of how the Native way of life is universal to all indigenous people. These are reflected in the project goals for the Interior region:

- Provide governance within the

Native community for the use and evolution of Native culture and education.

- Empower the elders in their traditional role of transmitting the laws, customs, and values of Athabascan culture.
- Make accessible the cultural resources that have been collected by disparate programs, identify the gaps in information and interview elders whose stories have never been recorded so that future developers of cultural materials can build on the base that already exists.
- Equip village personnel with the highest-quality program models, information resources and the networking ability to share experiences and conceivable solutions to rural problems.
- Promote unity among Native organizations.
- Wage war on alcohol and drugs.
- Provide elders with the means to express their concerns and to assume a leadership role in resolving issues of concern (education, social well being, elder care, family structure, etc.).
- Involve the University of Alaska Fairbanks, Native organizations,

"Whenever you are asked if you can do a job, tell 'em 'Certainly I can!'. Then get busy and find out how to do it."

—Theodore Roosevelt

school districts, youth programs and others in pursuing these goals. (From the Denakkanaaga, Inc. mission statements)

Still in the works is the Athabascan regional strategic work plan. It is important for me to learn of all the Interior rural events, activities, career fairs, science fairs, Native council/corporation meetings with emphasis on education, teacher in-service days, cultural camps, AISES club/chapter meetings, Native language workshops, traditions week, curriculum workshops, medicinal plant workshops, students hunting and gathering ventures, Native science field trips, elders' council meetings and other gatherings that highlight cultural change. Such information is important to the Alaska RSI in order to implement a comprehensive and systemic approach to education reform.

Project WILD Workshop

Along with interested persons from Ella B. Verneti School, Galena City School and sponsorship from the Alaska State Fish & Game education department, we facilitated a Project WILD workshop in Galena for a dozen local teachers last October. Two local elder women were invited to share their life experiences in two different cultures which they had to adapt to. For 16 hours we did hands-on cultural activities, teaching and sharing while safeguarding methods of peoples' lifestyles. Because of the success and quality time together, we decided to have another workshop at the Mokakit

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Conference entitled LISTEN.LEARN. LIVE.TEACH: Hands-on Designs for Integration of Indigenous and Western Scientific Knowledge.

What happens when you take an international curriculum like Project WILD, mix it up with the Alaska Wildlife Curriculum, then flavor and season it with an understanding of traditional Native language, stories and the many seen and unseen elements of nature observed from your area? The result: an intriguing workshop where everyone gains from the total group knowledge. We will take the participants on a multimedia field trip along the nature trail, share images, stories and then go WILD first-hand with an activity. Handouts include adapted activities and poetry created from our experiences in Galena and Koyukuk. That is our version of integrating science and math with an Athabascan perspective.

Watch and listen for upcoming events in the Alaska Rural Systemic Initiative and Rural Challenge Program. Thank you for your valuable time. ♦

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Curriculum Development from a Native Perspective

by Virginia Ned

The development of the curriculum unit, *Traditional Uses of the Birch Trees: Adaptation and Transportation of Interior Athabascan People*, is based on a short segment of the *K'etetaalkaanee* story as told by Johnson Moses at the Academy of Elders Camp/Native Teacher Institute held at Old Minto in July and August, 1996.

The goal of the unit was to form a foundation from which Native students can build their learning experiences. The framework of the unit is not stationary, but is always in motion. The ideas are interchangeable. The five aspects of curriculum development listed below states the purpose of the unit and helps to distinguish it as indigenous curriculum development.

Cultural Learning Expectations gives an overview of the cultural values or thought processes that are expected to be learned by the Native child. For example, in Johnson Moses' story of *K'etetaalkaanee*, four unstated Native values came to mind that are important for a Native child to learn. The values are: respect for an elder, determination to succeed even when encountered with difficulties, innovative thinking and respect for the land and animals.

Standards of the unit is the correlation of the Western and Athabascan world views. The standards seek to meet the requirements of the district curriculum guidelines, state standards and federal standards while reflecting on indigenous cultural content and Koyukon language.

The **Teaching Modality** is how, where and when lessons should be taught. The cultural unit should be taught in a natural setting with elders

"K'etetaalkaanee was the best story." —Johnson Moses, 1996

as instructors as much as possible.

Content Areas pertains to integration of the basic subject areas into the birch tree unit. An example is in the building of the birch bark canoe. Research and interaction with Native elders is a prerequisite to the development of Native science, mathematics and art. Subjects such as the basic mathematics, reading, creative writing, art, social studies and science are integrated into the knowledge of building a birch bark canoe. Research and interviewing techniques, listening, comprehension and critical thinking are a few of the skills that are taught simultaneously.

The **Cultural Background** gives specific information on topics discussed in the lessons. For example, some of the lessons were developed around the theme of the birch bark canoe. In the cultural background specific information was included on traditional modes of transportation.

The unit as a whole respectfully reflects the sincerity of indigenous curriculum development as a mode of passing on the knowledge of our ancestors in a school setting.

Thank you to the elders who shared their knowledge of our ancestors with us at the Academy of Elders Camp and all who made the camp possible. ♦

Southeast Region

by Andy Hope

I've spent much of the last two months working to close out 1996 projects, specifically the *Tlingit Math Book*, the *Curriculum Guide* and the *Tlingit Country Map and Tribal List* (This map will also include Alaska Haida tribes, clans and clanhouses.) Both of these projects should be published by the end of March 1997.

The math book was originally published by Tlingit Readers in 1973. It was written by the late Katherine Mills of Hoonah and her students at Hoonah High School. The revised book is being produced by Jackie Kookesh, currently a graduate student at University of Alaska Southeast in Juneau. Jackie is receiving technical support from Nora and Richard Dauenhauer and Michael Travis of Sealaska Heritage Foundation. The book will be made available at no charge to teachers in our three 1997 consortium districts: Chatham, Sitka and Hoonah. For others interested, please contact me at 465-6362.

The other publishing project to be completed by the end of March is the *Tlingit Country Map and Tribal List*. The map will list the traditional tribal territories of the Tlingit. It will be accompanied by a list of traditional

Tlingit tribes, clans and clan houses.

One of our main 1997 initiatives will be starting work on a regional cultural atlas. This atlas will be funded by the National Science Foundation and will have a math and science orientation. To begin work on this initiative, I will be working with a small design team. The team conducted its first meeting in Sitka on February 21 in conjunction with the Third Annual Native Higher Education Conference at Sheldon Jackson College.

I have organized two teleconferences to work on plans for summer programs. A number of possibilities have been discussed including a family history workshop, a curriculum development workshop, an Axe Handle Academy and a Tlingit language workshop. There is general agreement that the programs should take place in Sitka and that the target

participants should be teachers from the three consortium districts and members of the Southeast Alaska Native Educators Association (SEANEA). Final decisions have not been made as of this date, pending further consultation with the SEANEA and at least one more planning teleconference.

The Southeast Regional Elders Council just finished a very good meeting on February 27-28, 1997 and made a number of recommendations:

- To call for a summer SE Native language institute to work on Tlingit, Tsimshian and Haida curriculum
- To call for a SE tribal charter school and a SE tribal college and to request the SEANEA to investigate
- To call for a SE Native archives to be established in Sitka
- To call for the next elders council meeting to be held in Sitka the week of August 4, to be held in conjunction with the language institute, a family history workshop and SEANEA officers meeting

Members of the council include the following people: Arnold Booth, Metlakatla (Chair); Charles Natkong, Hydaburg; Lydia George, Angoon; Gil Truitt, Sitka; Isabella Brady, Sitka; Marie Olson, Juneau and Joe Hotch, Klukwan. ♦

Integrating the Tlingit Language Across the Curriculum

Pauline Duncan of Sitka, Alaska is a first grade teacher at Baranof Elementary School. Her philosophy includes a strong belief that the curriculum should include Native and non-Native students alike. Parents, families, elders and community members should be an integral part of the program.

Seven years ago Pauline took an active interest in learning the Tlingit language. As her fluency and her interest increased, she started looking

for ways to bring it into her classroom. Pauline has created a curriculum that uses the Tlingit language on a regular basis. She has been espe-

cially innovative in using items available in the Sitka environment and in the daily lives of the children to make learning the Tlingit language and culture meaningful and exciting. She has developed books, lesson plans, calendars, parent involvement activities and many other ideas that she has shared unselfishly throughout the Sitka School District (some Southeast school districts and Southeast

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Headstart) and beyond.

The following is a sample of only one of these creative activities—an herbal gift basket. The dedicated and genuine caring it must take to follow such a curriculum is awe-inspiring. What a wonderful learning experience she has created for her children and what a wonderful gift they have received to perpetrate the culture and language.

The gift basket activity was a unit that took months to complete and in order to gain the knowledge for it, Pauline attended an herbal-plant class and adapted what she learned to a first grade level curriculum. The elements that were covered were plants, the five senses, math, health, cooperative learning, language arts, technology and art. Following are the steps it took in order to complete the basket and the benefits the children gained from the experience.

September

Class expedition collecting leaves and pine cones that were then categorized by size and color and dried by the students.

October

Class trip to muskeg to pick Hudson Bay tea leaves. Taught how to identify leaves by color and smell. The historical use of the tea to the Native community was shared and discussed. When the leaves were dried, the class had an opportunity to taste the tea.

Late October

The class went to pick the rose hips from the Senior Center in downtown Sitka. A class discussion was shared on the high content of Vitamin C in the rose hips and its benefits. The rose hips were picked and the kids helped to pick out the seeds. Some seeds were placed under a magnifying glass so they could see why it was so important to remove the seeds. Jam

(see *Tlingit Language*, page 15)

AISES Corner (American Indian Science and Engineering Society)

by Claudette Bradley-Kawagley

Alaska Rural Systemic Initiative welcomes the Interior of Alaska into the AISES family. January 31 to February 2 was the first Interior AISES liaison teacher meeting. Teachers worked on culturally relevant science activities for the AISES chapter/clubs soon to be established in village schools. Teachers plan to hold monthly audioconference meetings to include more teachers within the seven school districts: Alaska Gateway, Galena, Iditarod, Nenana, Tanana, Yukon Flats and Yukon/Koyukuk.

Village students will develop science fair projects, develop plans this spring, collect data in the summer and construct display boards in the fall in preparation for an Interior Alaska Science Fair, November 1997. The teachers formed a summer camp committee to plan a July camp to be held at the University of Alaska Fairbanks and Howard Luke Camp. Students must submit plans for their science fair projects with the application to the camp.

The date for the Interior Alaska Science Fair will be November 20–22, 1997 in Fairbanks. Elders will participate in the judging processes along with teachers and scientists. Rita Alexander of Minto Elders Council attended the three day meeting for the Interior Alaska AISES liaison teachers. At the end of the meeting she expressed her gratitude that the Athabascan culture is going to be taught in the schools via AISES chapter/clubs. She encouraged the teachers to discuss AISES with the elders in their villages.

The Arctic Region AISES professional chapter held an audioconference meeting jointly with teachers in the Interior, members of the Anchorage AISES Professional Chapter and interested educators attending the Bilingual

Multicultural Education Equity Conference in Anchorage during the second week of February. This meeting helped teachers start precollege chapters and provide startup experiences of the Arctic Region AISES precollege chapters.

UAF AISES Chapter is sponsoring an AISES College Chapters Conference for Region I that includes students from colleges and universities in Montana, Washington, Idaho, Wyoming, Oregon, Vancouver, BC and Alaska. The conference will be held March 6–8, 1997, concurrently with the Festival of Native Arts. Students in dance groups from village schools are invited to attend sessions during the day. Alaska Native Education students of the Fairbanks North Star Borough School District will receive an invitation to attend the conference. The UAF AISES students are planning a career day and hope to have many precollege students in attendance.

Lots of good activity is being generated by the Village Science Application Initiative via AISES family groups: Chapter/Clubs, UAF College Chapter and Alaskan professional chapters. Three cheers for Alaska RSI. ♦

Yup'ik Region

by Barbara Liu

I am back full swing after a long bout with a flu bug. In December, elder Henry Alakayak called me from Aleknagik and said a similar flu was in his area, so I now call it the regional flu bug. Thanks are in order to Henry for lifting my spirits up at a time when I needed it.

Nutaan piyugtequa calingartua quserpak pelluan. Alussistuum qaingani Qilum Alaqnaqimek qayagauraanga qanerluni awani-llu naulluquniluki ayuqluta maani-llu. Quyallruunga seg'aqercellua angniitellemni.

The Yup'ik/Cup'ik regional initiatives in 1997 are *Culturally-Aligned Curriculum Adaptation* and *Language/Cultural Immersion Camps*. We will be working with

- Lower Kuskokwim School District (LKSD),
- Kuskokwim Campus (KUC),
- Yupiit School District,
- Kashunamiut School District,
- Lower Yukon School District (LYSD),
- Saint Mary's School District,
- Bristol Bay Campus (BBC),
- Southwest Region School District (SWSD) and
- Lake and Peninsula Borough School District.

The KYUK/ARCS MOA involves developing a documentary showing some of these schools.

Maa-i caarkat matumi allrakumi elitnaurutet yivriumaciqut. Elitnaurvigni calilriit tungqurluki caliciqua maani Kusquqvagmek LKSD-iit, Yupiit SD-aat, KUC-iiq. Cali-llu Qissunamiut, Kuigpagmek LYSD-iit, St. Mary's SD-aaq, Iilgayam nuniinek BBC-iiq, SWSD-aat-llu, Nanvarpagmek-llu Lake and Peninsula SD-aat. KYUK-iiq-llu tangercetaaliciquq elitnaurvignek elluarrluteng taqutellernek elinaurutkanek.

Thank you Esther Ilutsik, Cecelia Martz, Charles Kashatok and Greg Anelon, Jr. for seeing through the first year of what seemed like a monumental project to me. Through your help, we can focus on specific activities this year. New representatives from other districts will be on board and I look forward to working with all of you under this project.

Quyana-llu Arnaq, Tacuk, Ac'urun, Greg-aq-llu ikayurlua caarkat caucillemtaki augumi allrakumi pellullermi. Maa-i allanek elitnaurvignek ilaluta piqcaarcicukut, piinanemteni elitaqucaurciqut caarkaput-llu patagmek taqsugngariluki.

Recently, with the help of others, I met with invited MOA school representatives and individuals on February 24 and 25, 1997 in Bethel, Alaska. The theme of our meeting was *Integrating Yup'ik/Cup'ik Knowledge in Education*. School representatives are an integral part of this project in sharing ideas, brainstorming and planning ways we can integrate Yup'ik/Cup'ik language, culture and knowledge in contemporary science, math and other classes.

Quyurtellerkiullemteni quyana ikayurlua ernerkiurluta mat'umi Kepnercim

nangyartullrani Mamterillermi. Quyureskumta elitnaurutkanek yiv-riricicukut Yugtaat aturluki. Wani elitnaurvigni calilriit caliameng ilii maniluku, umyuangcarluteng caarkaneq taquciqut elitnaurutek-sunarqellrianek qaneryaramteggun, yuucimteggun, qanruyutet elitnaurutkani alaitengesqelluki.

The project initiative begins by focusing on activities that inspire the elders, teachers and students in integrating Yup'ik/Cup'ik language, culture and knowledge with Yup'ik/Cup'ik science and math curriculum development. Secondly, brainstorming to solicit ideas to integrate Yup'ik/Cup'ik language, culture and knowledge with science and math curriculum from an indigenous perspective. Finally, a planning session to establish tangible goals for the project and set calendar dates for the year.

Caliaput ayagniutengqertuq yivriluki elitnaurutkat atuugarkat tegganret, elitnauristet elitnaurat-llu piliarit paivvluki qaneryaramteggun, piciryaramteggun, qanruyutetgun atuulrianek watua. Nutaan-llu taqumanrilnguut alairrluki atuuyugngalriit nutem wangkuta yugni piciryaraput aturluku una aipaimta elitnaurilauciat ilaluku piyuutevcenek. Nutaan, taqucugngaukut caarkamtenek, taqlerkiurluki-llu caliamta piyuuti maliggluku.

The role of the regional elder council is to advise us on regional issues such as from the indigenous perspective. To facilitate this perspective, we would need to gain consensus on some of the regional issues under this project.

Tegganret calilriit qanrutnarqaakut caliamta qilertellerkaanek ellaita piyuutiit maliggluku, cali-llu wangkuta umyuallgutekluta tegganemta qanellrit maligtaquluki. ♦

*Yup'ik translation in Akula dialect.
Mumigtelqa Yugtun Akulmiucetun pimaug

Learning Put Into Cultural Perspective

by William Beans

I have observed interaction in a number of situations where I have watched students learning in an out-of-school situation. The adults who taught them were always willing, when given an opportunity, to teach skills they used in their everyday lives. They were the “elders”, or professionals by right, in their daily life activities. I will give two examples—one of a male and the other of a female—teaching skills they have mastered in their perspective roles.

The first one I would like to describe is the making of a *taluyaq*, or trap, used for catching black fish, mink, otter or muskrats in the traditional way. The instructor already had straight grain driftwood split into strips for the students. He explained that this wood can be found during the summer when at camp, etc. He explained that not just any wood can be used for this purpose. Students were able to look at and touch the wood as he explained. He described the grain of the wood and how it could bend easily without breaking. The straight grain wood was three and a half to four feet long. The driftwood had to be carved down to approximately one-half inch wide by three-eighths of an inch thick. The instructor then had the students get a feel for the *canasuun*, or carving tool, by giving them one. He demonstrated how to use it. Then he gave the students scrap wood so they could practice using the tool before they began carving the material for the traps. He explained that it was important for all the strips to be carved down and he told them how many they needed to complete the trap. Once done with the strips, he went on to make the neck of the trap, estimating how big he wanted the trap to be. He made his estimation based on materials at hand. The students carefully observed as he worked

on the neck of the trap. He showed them each step of the way how it was to be done. The instructor also had roots of alder trees that he had gathered for tie downs. The roots had been gathered during the summer months from along the river bank.

The elder showed in detail the process of putting the trap together, giving the students examples and having them work through the process firsthand step-by-step. With every success he gave them praise, letting them know that they have the ability and skill to make anything that they set out to. The students experienced success with each step they completed and were excited about what they were doing. The trap is considered completed when the apprentices, or students, set the trap and provide a meal for the elder and his family. The apprentice type teaching by the elder works with great success.

The next teaching situation I would like to describe is the making of a parka. An elder, in the process of making her own parka, had two young ladies working with her while cutting, measuring and sewing materials. She did not use measuring tape, but rather used herself as a mannequin. She talked her students through the steps, describing how and which cuts and measurements went where. The elder had the students do the

actual hands-on as she went about making measurements and cuts. She laid out the materials and explained why certain pieces went where. That is, there are certain patterns on the skins that the maker wants to match up. It is like working a puzzle, by piecing the skins together to get the visual just right. The cutting of the materials has to be just right, so that when the sewing begins the skins will not be lopsided or uneven. The elder got the visual of the pieces together then began the process of cutting. Under her close supervision the students were tasked with helping her cut the materials. As they completed a task, the elder explained the steps to the next one. Parka making involves a number of tasks. The ruff and trimming are added to make the parka complete. Each step involves sewing. The elder continually demonstrated how to do this while explaining the importance of the stitching. With each phase of work, the elder praised each lady's work. The students gained self-confidence as their efforts were acknowledged. The end result was a nice, completed parka for the elder. For the ladies, there was a feeling of accomplishment and a good feeling inside, knowing that the elder would have a parka to keep warm in the cold. The ladies also sensed that they would receive praise from other women about what great skills they possessed for being able to do a good job.

In both of the tasks I have described, the teacher/elders showed much patience in working with the students. The frequent encouragement, praise and help they gave along the way kept the students from becoming frustrated, giving up and quitting. Learning the skills became a

(see “Learning” page 13)

Inupiaq Region

Integrating Indigenous Knowledge into Education

by Elmer Jackson

The Northwest Arctic Borough School District (NWABSD) Inupiaq Language and Culture Curriculum Review committee is in their second year of reviewing and creating new curriculum. My report will be on the subsistence calendar for all seasons. This indigenous way of life will be incorporated into the curriculum. Another important part of many Inupiat efforts is to teach our Inupiat language to the young. Although the future looks grim, it is hoped that one day our Kobuk river Inupiat dialect will be not forgotten by the young, leaving only our elders knowing how to speak Inupiaq. With the help of technology, elders and linguists, we might be able to keep our dialect alive.

Last year, the bilingual curriculum committee began the task of restructuring the bilingual curriculum program. We changed our mission statement and began revising the curriculum by creating the Inupiat subsistence calendar beginning with:

A. *Upingaksraq—Early Spring (March and April)*

1. Food gathering. Caribou, moose, reindeer, bear, rabbits, porcupine and muskrat provide food for the Inupiat. A variety of seals and whales are a gift from the sea. Edible plants and berries are harvested during the summer and fall. Fish are abundant in the Arctic.
2. It is important to learn about the environment and to respect it. Safety on ice and learning survival skills is important.
3. Arts & Crafts. Waterproof maklaks, parkas, mittens and other warm clothing are made by women. Men are creating tools, sleds, harpoons and other household utensils. The men are usually trapping and snar-

ing rabbits for fur and food.

4. Games that require physical activity are *aqsraaq*—Inupiaq football, Norwegian ball game, *manna manna, maq, anakitaq* and Native Youth Olympic games.
5. The Northwest Arctic Native Association (NANA) have listed the following Inupiaq values: knowledge of language, sharing, respect for elders, love for children, hard work, knowledge of family tree, avoiding conflict, hunter success, humor, spirituality, family roles, learning domestic skills, responsibility to tribe, love for children and respect for nature.

B. *Upingaksaq—Spring (May)*

1. Migrating ducks and geese, whales and beluga provide a welcome change in the diet. The rivers and streams are free from ice. Other food harvested are various types of fish such as sheefish, whitefish, trout and pike. Many people follow the river ice, hunting for waterfowl and muskrats.

2. An Inupiaq value that is alive is sharing. When a young hunter catches his first game it is given to an elder. A person who lives the subsistence way of life must learn the skill of skinning and dissecting game animals such as bear, moose and caribou. A hunter is a person who when subsistence hunting, treats them with respect. It is important to learn the anatomy of the animals that are hunted for food.
3. The cultural skills practiced are net making, sewing, beading, berry basket making and other arts and crafts.

C. *Auraq-upingaaq—Summer (June-August)*

1. Berries begin to ripen in July. Blueberries, salmonberries and raspberries are picked. Fresh greens such as rhubarb, sourdock, willow greens, fireweed shoots and beach greens are harvested and some are mixed with berries. Eggs from ducks, geese and other waterfowl are also in season. Ducks and geese molt this time of the season. They are at their heaviest, having fattened themselves. Many Inupiat are involved in different methods of fishing. Caribou frequent the tundra and river. People of the coast are hunting seals, beluga, walrus and whale. People inland have nets out to catch whitefish, trout, pike and salmon. Another method of fishing is by seining.
2. Summer is a very busy time for many Inupiat. Many women on the Kobuk river are out gathering birch bark and tree roots for the art of making baskets. Other summer projects are ulu-making, beading, parka-making, carving oars and countless arts and crafts items.
3. There are many plants and herbs that are harvested for medicinal

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purposes. The stinkweed is best harvested when the plant has a strong odor. This is when the plant curing strength is at its strongest. This plant is used to help cure chest colds and help cure the body of other ailments. Crushed willow leaves are used to relieve bee stings. The food contents of the porcupine are dried for curing loose stools or an upset stomach. There are many other plants that need to be researched for their medicinal purposes.

4. There are many indigenous games that need to be brought back and taught to the young. The Native Youth Olympics and the World Eskimo/Indian Olympics are held every year. Many schools in the Bering Straits, the NWABSD and the North Slope Borough School District involve their students in the Native Youth Olympics.

D. Ukiaksraq—Early Fall

1. Bear, moose and caribou are hunted and put away for winter. Many different kinds of fish are cut, cleaned and dried. *Masru* or wild potatoes are gathered and put in seal oil. *Tinniks* or bearberries are picked and mixed with seal oil or bear fat.
2. By observation, Inupiat people have learned to predict weather through weather and geographical indicators. Elders teach traditional beliefs about weather. It is important to learn place names, camping grounds and geographical places. It is wise to let someone know where you are traveling to. Elders need to teach survival techniques. Learn where hunting and gathering places are. Know whose camps belong to whom and to show respect for the property.

E. Ukiaksraq—Fall

1. Mother nature in the fall is gener-

ous in terms of food gathering. The Western Arctic caribou herd migrates through the Noatak and Kobuk river valleys. Other food gathering activities include berrypicking, hunting and fishing. Hunting of seals, walrus and whale occur in the coastal parts of the Inupiaq region. Many Inupiat people are skin-sewing, carving, ice-fishing and making and mending nets.

2. Inupiat of the northern regions celebrate and give thanks on Thanksgiving day. Many have harvested from the bounty of Mother Earth. Many gather at the local church for the Thanksgiving feast. Throughout the day and night there are activities for the people in the community. Spirituality is alive within the Inupiat culture; we give thanks to our Creator for giving us everything to survive in our environment.

F. Ukiuq—Winter

1. Many Inupiat are busy with their daily lives; some are hunting and trapping; women are sewing warm clothing for the cold winter months. Other projects are net making, carving, creating implements, tanning furs and celebrating birthdays. Many people attend important community and school functions. Christmas celebrations are held with Eskimo dancing and giving gifts at the church. A feast at the community building or at the church is held celebrating our Creator's birthday.

In January, the Inupiat Curriculum Committee worked on developing K–6 curriculum. Our work on the curriculum is continuing with the hope of keeping our language and culture alive. ♦

Learning (continued from page 11)

meaningful, unforgettable and enjoyable experience.

In comparing and contrasting these examples to how learning occurs in school, it is to be noted that in the classroom setting this type of teaching and learning very rarely occurs. Why? In the classroom setting, teachers are textbook driven. Lessons are designed in such a way that teachers stick to teaching in a chronological order. Teachers are locked into a method of teaching that goes from addition to calculus, from Columbus to World War II. This method of teaching is very contradictory to the learning and teaching that occurs in our daily lives.

The educational system we impose on students is contrary to the methods used by our elders. This puts into perspective why it seems our educational system is not working. In the

classroom, our students are not interacting with someone, but rather are taking symbols and numbers and trying to make something of them. In many situations, students get frustrated and angry and as a result, do just enough to get by. In an interactive teaching situation, such as with the elders, students learn what is being taught and they grow through experiencing. The elders gain as they share with and learn from the students with whom they are interacting.

In summing up, I would like to say, from the observations made, that we need to step back and look again at the population with whom we are working with. We need to reassess how we can become better educators, using the rich resources available to us, and capitalizing on the elders and what they have to offer. ♦

Aleut Region

by Moses Dirks

Happy New Year! *Snuugii Guudam! Slum tagadagan Inixsinaa! Slum Tagadagan Qagataa.*

The Aleut Region is completing its first initiative—Indigenous Science Knowledge Base—which is a Jukebox program on a compact disc containing information on indigenous science and is near completion. As soon as certain procedures are taken care of, the Jukebox program will be made available.

The Aleut Region is now in the process of implementing its second year with the Alaska Rural Systemic Initiative. This year's initiative for the Aleut Region is entitled *Elders and Cultural Camps*. This initiative would require, with the help of the memorandum of agreement (MOA) partners, setting up an academy of elders, Native teacher organizations and cultural camps in the region. Along with the elders we will teach the Native ways of doing things. We are hoping to set up two elder and cultural camps in the region—one in the Aleutian and one in the Kodiak/Chugach Region.

Aleutian Pribilof Area

The potential MOAs with the Aleutian Pribilof Island Association and the Unalaska Public Schools have been contacted to help out with the initiative for this year.

Kodiak Area

Kodiak Area Native Association (KANA) has also been contacted as a potential MOA, they will also be involved with helping this year's initiative. This is the second year that KANA has been involved with the project. KANA was our original MOA partner for the development of the "Jukebox" program.

Chugach Area

Chugach region has been contacted about the second year initiative, *Elders and Cultural Camps*. Chugach

Alaska Corporation was contacted and informational material was received from them about cultural camps they have running in their region during the summers. The Aleut/Alutiiq Region is in the process of informing and involving all potential partners who would be interested in participating in this year's initiative.

The Aleut region will be following up on the signing of the potential MOAs this spring. The sooner we can sign everyone involved we can proceed with the initiative for this year. We are excited about working with our elders.

If you have concerns or questions please call me at (907) 274-3611, Monday through Friday between 8:00 A.M.–4:30 P.M. ♦

Young Navigators Explore South Pole

by Joshua Lewis

Young navigators aggressively explored the fifth largest continent in late November. The sixth grade of North Star school and the fourth and fifth grades of Peterson Elementary in Kodiak traveled across 15,000 miles and 22 hours of time zones to speak one on one with a team of scientists currently undertaking research at McMurdo Station, Ross Island, Antarctica.

Through special arrangements with the National Science Foundation, excitement built a strong momentum. As a North Star School teacher, I received a call from Antarctica at 1:00 A.M., November 25th informing me of the 48-hour timeline. Strategy was designed and implemented while students quickly took up the challenge to discover all aspects of life and types of research conducted at the Southern Pole. Diving headfirst into the Internet was seconded only to massive research

through traditional means of articles, documentaries, books and encyclopedias. E-mail and phone calls flew across satellites as preparations continued. The Peterson fourth and fifth grade crews joined in the expedition through the efforts of teacher Ron Gibbs.

One father reported that his son, Robert Rounsaville, had talked of nothing else since the Inter-Polar Conference had been announced. As Robert's second grade teacher, I re-

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Students Robert Rounsaville and Joseph Carvalho of North Star School in Kodiak discover the world through school without walls.

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membered Robert had expressed dreams of one day discovering a new life form when he grew up. While scientists unwound descriptive stories of giant 170 lb cod so new no name has yet to be given, Robert was hard pressed not to climb into the speakerphone.

I explained that the expedition via conference call was a long process come to fruition through the efforts of Earl Ramsey, a scientist currently conducting research at McMurdo Station. Ramsey, a lifelong Anchorage

Village Science

(continued from page 3)

getting out of balance and falling out of orbit.

This is a subject for a book—not a brief article—but I had to initiate the thought at some time. If my outboard motor doesn't work, I immediately follow a troubleshooting sequence. If our lives or communities aren't working, we need to initiate a similar process, acknowledging the spiritual laws and principles; set straight those things that we have violated; and strengthen those things that we have already done well. ♦

resident, has been working in both polar regions for the last six years. On his brief returns to Alaska, Ramsey has always made time to lecture to my students providing vivid images of research through stories and slide shows. In October, Ramsey visited the aggressive navigators in Kodiak. The teleconference was one step in furthering the ongoing relationship.

Student questions to the team of scientists covered every aspect from animal life and vegetation to loneliness and isolation. The youngsters

were surprised to learn how fragile the fresh water system is. Scientists explained they are consumed with the process of making fresh water at all times. Students were enchanted with the image of standing nose to nose with a huge penguin and also expressed concern about the ozone layer issues pertaining to global warming. In a followup e-mail, the McMurdo team stated they were very impressed by the caliber of inquiry by such young researchers. The one-hour teleconference stretched to nearly two, and as Ramsey stated, could easily have been three.

As the questions and answers continued to fly, the sense of community and ownership was built across the phone line. At McMurdo, the scientists being interviewed were joined one-by-one by other research team members. The lead NSF scientist, Dave Bresnahan, sat quietly listening as the room at McMurdo filled to capacity. The North Star classroom, stuffed with 60 intrepid explorers frantically attempting to capture the moment with extensive notes, diagrams, sketches, videography, photography and maps were joined by reporters, parents and teachers silently slipping into the room to catch a few moments. Tension was high until students felt assured ev-

eryone would have their moment to ask a personal question.

The most recent and last communication from McMurdo station, Ross Island, Antarctica was placed by the head of communications. Students were informed Ramsey would no longer be in direct contact with them. He had begun his extensive traverse across Antarctica to continue research on ice core samples. The samples unlock such secrets as oxygen levels pertaining to air quality thousands of years ago. As Earl begins his traverse, so continues the story as the young navigators follow in his footsteps. ♦

Tlingit Language

(continued from page 9)

was made in the classroom enabling them to smell and taste the jam.

Also in October

The class had an outing to pick yarrow, a medicinal plant that is also in the basket. It is used for healing tea or to clot blood. Sitka is rich with the yarrow plant. They were shown how to identify it and how to dry it for tea.

The red clover in the basket was brought to class for them to observe the drying and the making of medicinal ointment from the dried leaves.

Pauline honors the culture and heritage through integrated instructional planning. Sitka is their textbook for science and social studies. Included in her curriculum are basic classroom commands, counting, subsistence foods, nursery rhymes, a daily lunch count, colors, songs, posters with matching tapes and a calendar that translates well-known rhymes into the Tlingit language.

If you would like more information regarding her program, feel free to contact her at 305 Baranof School, Sitka, Alaska 99835. ♦

Cross-Cultural Orientation Program For Teachers

June 9-27, 1997

Fairbanks Campus/Old Minto Cultural Camp

Purpose

The Center for Cross-Cultural Studies, University of Alaska Fairbanks will be offering the annual Cross-Cultural Orientation Program (X-COP) for teachers beginning on June 9, 1997 and running through June 27, 1997. It includes a week (June 14-21) out at the Old Minto Cultural Camp on the Tanana River with Athabascan elders from the village of Minto. The program is designed for teachers and others who wish to gain some background familiarity with the cultural environment and educational history that makes teaching in Alaska, particularly in rural communities, unique, challenging and rewarding. In addition to readings, films, guest speakers and seminars during the first and third weeks of the program, participants will spend a week in a traditional summer fish camp under the tutelage of Athabascan Elders who will share their insights and perspectives on the role of education in contemporary rural Native communities. Those who complete the program will be prepared to enter a new cultural and community environment and build

on the educational foundation that is already in place in the hearts and minds of the people who live there.

Course, Credit and Instructor

The X-COP program is offered for three semester hours of academic credit and is designated as ED 610, Education and Cultural Processes. The credit is applicable toward the UAF M.Ed. degree, as well as the Alaska certification renewal requirement of three semester hours in "multicultural education." The course may also be followed with two on-site graduate courses offered during the fall and spring semesters to help integrate what is learned in the summer into teaching practice. The instructor for the course is Ray Barnhardt, Ph.D., who has over twenty-five years of rural and Native education experience in Alaska.

Fees

Participants enrolling in the three-week X-COP summer course will be assessed the standard tuition fee for a three-credit graduate course (\$453), \$50 for books and materials, and a \$100 fee for food, lodging and trans-



portation during the week at Old Minto. Dormitory rooms or married student housing are available on campus for participants in the program. Information on housing rates and applications may be obtained from the UAF Summer Sessions office (474-7021) or the Housing Office (474-7247).

Enrollment Information

Anyone wishing to enroll in the X-COP program should contact one of the UAF College of Rural Alaska campuses (in Kotzebue, Nome, Bethel, Dillingham, Barrow and Interior), the School of Education Center for Cross-Cultural Studies (474-6431), or the Summer Sessions office in Fairbanks (474-7021) for enrollment forms. For further information, call 474-6431 or send e-mail to ffrjb@aurora.alaska.edu. ♦

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