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Brunk, Blanche R.

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University of Alaska Fairbanks
CRA, Health Programs
305 Tanana Drive, Brooks Bldg 1st Floor #107
Fairbanks, AK 99775-6500

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13. SUPPLEMENTARY NOTES

14. ABSTRACT

Less than one percent of all math, science, and engineering baccalaureate and graduate degrees at the University of Alaska Fairbanks (UAF) are awarded to Alaska Native students. Academic preparation, lack of exposure to science careers in rural Alaska and little connection between western science and Native traditional life have combined to impede Native student interest and progress in math and science education. The goal of this project is to further develop and deliver, both on-site and through distance learning, a comprehensive program of developmental and college preparatory math and science courses at Minority Institutions throughout the State of Alaska.
An integrated preparatory cohort of math and science courses at five geographically isolated Alaska Native Minority Institutions with campuses in Kotzebue, Nome, Bethel, Dillingham and Sitka that allows for successful articulation to baccalaureate and post baccalaureate study in both the math and science fields will be developed and launched.

15. SUBJECT TERMS
Alaska Native Students, First Generation College students. English as second language speakers, distance education partnerships.

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a. REPORT	b. ABSTRACT	c. THIS PAGE			Blanche Brunk
U	U	U	UU	3	19b. TELEPHONE NUMBER *(Include area code)* 907-474-6640

Rural Alaska Mathematics and Science Network
Blanche Brunk, PI
University of Alaska Fairbanks
College of Rural Alaska
PO Box 756500
Fairbanks, Alaska 99775-6500
(907) 474-6640 (907) 474-7415
Blanche.Brunk@uaf.edu
Grant#N00014-98-1-0745

Final Report

Long-term Research Objective:
Less than one percent of all math, science, and engineering baccalaureate and graduate degrees at the University of Alaska Fairbanks (UAF) are awarded to Alaska Native students. Academic preparation, lack of exposure to science careers in rural Alaska and little connection between western science and Native traditional life have combined to impede Native student interest and progress in math and science education. Our objective over the life of this project has remained the same: to further develop and deliver, both on-site and through distance learning, a comprehensive program of developmental and college preparatory math and science courses at Minority Institutions throughout the State of Alaska.

S & T Objective:
Create an integrated preparatory cohort of math and science course at five geographically isolated Alaska Native Minority Institutions with campuses in Kotzebue, Nome, Bethel, Dillingham and Sitka that allows for successful articulation to baccalaureate and post baccalaureate study in both the math and science fields.

Approach:
The UAF formed the Rural Alaska Science and Mathematics Network (RASMN). RASMN hired faculty to deliver courses locally from the remote campuses throughout rural Alaska. Faculty mentored and tutored students taking college courses in the College of Rural Alaska and at the University of Alaska Southeast Sitka Campus.

The presence of qualified math and science faculty at these remote locations positively benefited colleagues, students and the communities. Using an inclusive approach, RASMN outreached young students in the 18 to 25 year old age group advising, recruiting and supporting them in studying math and science subjects and in enrolling in related certificate and degree programs. Most of these young people were first generation college students.

Prior to the Phase Down Period in 2001, RASMN faculty traveled extensively throughout the rural regions to advise and recruit students. With fiscal restrictions in place, telephone, email and web contact with students through the RASMN web site www.uaf.edu/rasmn were the main vehicles for student contact.

S & T Completed:

The following faculty taught mathematics and science courses to approximately 100 students each academic year during the five-year RASMN project:

Lana McNeil Assistant Professor of Geology, UAF Northwest Campus, Nome
Mason Skiff, Assistant Professor of Chemistry, UAF Bristol Bay Campus, Dillingham
Tom Harmon, Assistant Professor Mathematics, Sitka Campus UAS
Jan Straley, Instructor Mathematics, Sitka Campus UAS
BJ Wolters, Assistant Professor Biology, UAF Northwest Campus, Nome
Bob Brown, Assistant Professor Chemistry and Mathematics, UAF Kuskokwim Campus, Bethel
Corky Corkren, Assistant Professor of Biology, UAF Kuskokwim Campus, Bethel
Brian Rasley, Assistant Professor of Chemistry, UAF Bristol Bay Campus, Dillingham
BJ Hamilton, Assistant Professor of Biology, UAF Kuskokwim Campus, Bethel

More than 85 percent of the students were Alaska Native from remote communities around the state. Outreach to young college age and high school students was a priority during the RASMN project. Annually RASMN staff and faculty joined in the Alaska Federation of Natives Convention in Anchorage to meet potential new students, parents and others interested in the realm of math and science study. A summer RASMN camp was a special highlight in 2001, when Alaska Native high school students from villages came to the UAF campus for 7 days of in depth exposure to science and math careers, college courses and firsthand experience with the campus community.

The academic linkages between the science and mathematics faculty on the UAF campus and the CRA faculty were strengthened because of the RASMN. Now one of the CRA science faculty positions is jointly funded by UAF. Collegiality is at an all time high.

Although the RASMN project was phased down, it was extended for the full five years of funding, this chain of events presented a full array of challenges and opportunities.

Impact/Navy Relevance:
RASMN enabled more than 400 students to enroll in and complete science and math courses. The impact of this event on a group of first generation college students, most of who were grossly under prepared for any sort of academic success, though difficult to measure on the short term, is still significant in human terms. Even though Alaska is large geographically, the state's small population makes it possible to know many of these students and their families. For this reason, the gains in belief in one's abilities to succeed and other pre requisites for college success, so often absent in these young people, were evident in most that were touched by RASMN.
The final funding period, although drastically reduced, continued the strong focus on meeting the mathematics and science instructional needs of rural Alaska Native students. The educational migration to more on line and distance course delivery is well underway in Alaska as more of the village regions become connected with adequate internet bandwidth available at low cost to communities and schools. The web enhanced science and math courses funded through RASMN

and the lessons learned from their development and delivery will continue to reach students long after the project concludes.