
University of Alaska Fairbanks
New Degree Program Request: Format 3

VETERINARY SCIENCE PROJECT

Certificate
35-36 Credits minimum

Submitted by
Interior-Aleutians Campus
College of Rural and Community Development
October 2005

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I. COVER MEMORANDUM

A. NAMES OF PERSONS PREPARING REQUEST

This request prepared by Clara Johnson, Director, Interior-Aleutians Campus, in collaboration with Eric Jayne, Program Development Specialist, Interior-Aleutians Campus, Chukchi College and Lou Brown, USDA Drum Beats Program Manager, Interior-Aleutians Campus, College of Rural and Community Development, University of Alaska Fairbanks.

Advisors and discipline experts who helped create the proposal and who reviewed the many drafts include: Dr. Ken Hill, DVM, Cordova Alaska, Dr. Joe Evans, DVM, MRCVS, Board certified orthopedic surgeon, Nederland Colorado, Teresa Heaston, lic. Vet Tech, Barrow, Ak, Kimberly Savage, Vet Tech, Nederland, Colorado, Dr. Louisa Castrodale, State of Alaska DEC, Anchorage, Ak. Dave Pauli, Director Humane Society, Billings Mont., Tanja Korta, Lay Vet Tech, Galena, Ak., Barbara Cole, Medical Educator, Anchorage, Ak., Judy Steyer MD, Medical practitioner, TCC, Fairbanks, Ak., American Veterinary Medical Association- veterinary technician certification staff , Dr. Betsy Rogers, Animal Emergency Clinic, Fairbanks, Ak., Gerald Riley, Alaskan native mentor, Nenana, Ak., Steven Bergman, Alaskan native mentor, Alakaket, Ak., Richard Carroll, Alaskan native mentor, Fort Yukon, Ak., Ramy Brooks, Alaskan native mentor, Healy, Ak., George Beran DVM professor emeritus, ISU, Ames, Ia., William Reece DVM, professor emeritus, ISU, Ames, Ia., National Bison Association- various personnel, Jack Reakoff, Alaska Fish and Game board, Wiseman, Ak., Numerous persons in the villages of Kaktovik, Arctic Village, Venetie, Fort Yukon, Circle, Eagle, Central, Northway, Haines, Skagway, Dot Lake, Nenana, Healy, Beaver, Stevens Village, Tanana, Ruby, Galena, Nulato, Koyukuk, Kaltag, Huslia, Hughes, Alakaket, Bettles, Kobuk, Shungnak, Ambler, Kiana, Selawik, Noorvik, Kotzebue, Diomedede Island, Unalakleet, Nome, Elim, McGrath, Talkeetna and Wiseman/Coldfoot.

B. BRIEF STATEMENT OF PROPOSED PROGRAM

Overview: Alaska is one of only 8 states that currently have no Veterinary Science (VTS) program. Because of this there is a shortage of licensed veterinary technicians in Alaska. Currently there are 108 licensed VTs for the 264 licensed veterinarians in the state. Of these only 6 live in rural areas. Of the licensed veterinarians, only 6-10 practice in rural areas. Clearly the State of Alaska has a great need for licensed VTSs in both rural and urban areas as well as licensed veterinarians in rural Alaska. To become a licensed VTS a person must work for a licensed veterinarian for two years in the capacity as a tech or pass an AVMA (American Veterinary Medical Association) certified VTS program. Both require passing a national VT exam before the VT license is issued. In Alaska, the 2 year work option will be phased out in the year 2010 leaving a VTS course as the only option.

The shortage of rural VTSs and veterinarians has led to a crisis in adequate veterinary care for domestic pets and livestock. Untrained or limited trained people have filled this role as best possible. The shortage of adequate rural veterinary care has affected the ability of interested people to have successful large animal farming operations. These large animals include cattle, swine, sheep, goat, equine, reindeer, bison and musk ox. The root of a successful farming operation is the ability to deal with disease, nutrition and management problems.

A further role of the veterinary field is in public health issues. These issues include zoonotic diseases, rabies prevention, testing and education, water and food quality testing as well as meat and seafood inspection.

An additional application of this program is in tribal resource management. Here the veterinary/VTS could provide diagnosis and monitoring of wildlife diseases as well as wild game inspections.

Additional employment and educational fields can be entered from this program. The program will provide a strong educational starting point for students interested in entering a veterinary college or becoming a veterinary medical illustrator.

The Veterinarian Technician Science (VTS) program will offer a core VTS certificate from which the student can expand into different learning tracks. These tracks include veterinary technician and veterinary medical illustration. The veterinary technician track has been designed to fulfill the needs for AVMA accreditation. The AVMA requirements are very clearly defined and have been added as an attachment to this document.

This program will be both rural and Alaskan Native culture oriented. The rural orientation will include information about reindeer, bison and musk ox as well as medical adaptations to extreme cold and remote areas. The program will also emphasize essential veterinary knowledge for sled dog care. The role of dog mushing in rural Alaska has strong and distant roots. Alaska Native musher's are role models for their community and a link from the past to the future. Up until recent years, the rural Native dog teams were the champions and role models of many Native youth. Recently the rural teams have been plagued with diseases that have been carried in from teams that arrive in Alaska from around the world. The lack of adequate veterinary services in rural areas has been the greatest obstacle to rural Alaskan dog musher's.

Culturally the program will include traditional Native perspectives on community, fairness, the human/animal interaction, powers of observation, problem solving skills and the concept of sharing vs. limiting knowledge. Contemporary veterinary science is presented in an elite manner. It is taught that the everyday person does not have the skill or intelligence to use basic veterinary skills and information. This view comes from the monetary emphasis of western teaching. The Alaskan Native perspective is that knowledge should be shared with others. This view comes from the community perspective of Alaskan Native values.

Alaskan Native culture also strongly emphasizes the value of learning from life experiences. This reinforces the idea that what you learn from a book or in a classroom may not necessarily be true. It provides the strongest of educational roots - questioning what is done, looking for newer and better ways of doing things. It also enhances a student's problem solving and observation skills.

These and other Alaskan Native values will enhance veterinary science. It will lead the way for learning paths that are inclusive of others. Its value of fairness will lead to trained veterinarians who are sensitive to the needs of people and their animals.

The course work to completion for the Veterinary Science Certificate will take approximately 1 1/2 years – 2 years. It is expected that students will be highly motivated to complete this within the 1 1/2 year time frame. Classes will be delivered by distance education and intensive 2-4 day laboratories at a central location.

This program will work closely with rural Alaskan village and tribal entities. It also will be inclusive of the urban veterinary needs within the state.

Objectives: VTS & the College of Rural and Community Development: The Veterinary Science program fits the overall goals of the College of Rural and Community Development by training rural Alaskans in fields that can allow them to remain in their village and find employment. Veterinary science knowledge and skills are lacking in the villages at this time. The villages are at a tremendous disadvantage without these services being available.

Furthermore, the veterinary science program will encourage Alaskan Native males to enter the fields of science. Currently the ratio of Alaskan Native females to males graduating from higher education is 3:1.

Veterinary Science (VTS) students will be required to complete the 35-36 credit degree in two years. They will complete 9-10 credits of General University Requirement courses in computation, communication and human relations. They will complete 26 credits of additional required courses. The Veterinary Technician track will require an additional 23 credits of course work to be completed within an additional 1 1/2 years and the Veterinary Medical Illustration track 6 additional credits. Credit for prior learning will be offered for VTS experienced students.

In addition VTS electives will be offered outside of the main program tracks to fulfill the wishes and needs expressed from rural communities.

APPROVALS

Director, Interior-Aleutians Campus

Date

**Curriculum Council Chair,
College of Rural and Community Development**

Date

Dean, College of Rural and Community Development

Date

President, UAF Faculty Senate

Date

Chancellor, UAF

Date

President, University of Alaska

Date

Board of Regents

Date

II. IDENTIFICATION OF THE PROGRAM

A. DESCRIPTION OF THE PROGRAM

1. **Program Title:**

Veterinary Science (VTS) Program

2. **Credential level of the program:**

Certificate

3. **Admission Requirements and Prerequisites:**

Admission is open to all individuals, especially those with a background and interest in animal husbandry and health, wildlife diseases, tribal resource management and public health.

Students should have a strong motivation and a background of participation in veterinary science.

Students should be familiar with computer use and animal handling prior to enrollment in Veterinary Science courses.

Students must develop an Individual Educational Plan with a strong partnership and mentorship component to include three participants: the student, an academic advisor, and a veterinary mentor. The academic advisor could be from the teaching staff or other advisory staff of the University of Alaska Fairbanks. The mentor could be a local practicing veterinarian or VT, a distance accessible veterinarian/VT or a veterinarian/VT employed in other fields such as fish and wildlife.

The Individual Educational Plan must:

- Build upon a comprehensive picture of current strengths and weaknesses and areas of knowledge and skill.
- Provide a clear path of skill development to cover the gap between existing strengths and the current or prospective job requirements.
- Incorporate the following VTS program goals:
 - Well-developed logic and reasoning skills, including critical thinking and problem-solving abilities
 - Computer literacy, communication skills, research experience and animal handling skills.
 - Independent goal-setting and observation skills
 - Job-related work experiences, especially veterinary clinic practical experience.
 - Strong interpersonal skills in professional ethics.
 - Broad academic exposure encompassing issues of animal health and care, public health and wildlife.

The Individual Educational Plan will be used as the basis for a student portfolio developed by each student as part of an outcomes assessment process. The portfolio will clearly show the student's occupational related academic accomplishments. A portfolio will demonstrate that each student has met the entry-level competency skill standards for Veterinary Science/Technician jobs.

To remain in good standing students must:

- a) Complete at least 35-36 credits within two years
- b) Maintain a 2.0 grade point average
- c) Follow a sequential plan of study to meet job skill requirements

4. Program Outline and Course Descriptions

Veterinary Science Certificate

Related Instruction Requirements

Communications

Engl 111X Intro to Academic Writing 3 cr

Human Relations

ANTH/SOC 100X Ind, Society, and culture 3 cr

Or

ABUS 154 Human Relations 3 cr

Computation

Math 107x Functions for Calculus 4 cr

Or

VTS 115 Math for Veterinary Science 3 cr

Or

DEVM 105 Intermediate Algebra 3 cr

Major Specialty courses

Chem 103x- Basic General Chemistry 4 cr

Or

Chem 105x- General Chemistry 4 cr

Biol 103x – Biology and Society 4 cr

Or

Biology 105x- Fundamentals of Biology 1 2 cr

VTS 101 – Introduction to Veterinary Science 2 cr

VTS 110 - Veterinary Medical Terminology and Communication 2 cr

VTS 130 - Animal Anatomy and Physiology 3 cr

VTS 140 - Animal Husbandry 3 cr

VTS 150 - Animal Nutrition and Feeding 3 cr

VTS 160 - Animal Diseases and Medicine 3 cr

VTS 199 – Veterinary Science Practicum 2 cr

Total 35-36 cr

Course Descriptions

VTS 101 - Introduction to Veterinary Science. Topics: Definition of Veterinary Science, concepts of lifelong learning, research skills, techniques of observation, occupational and zoonotic safety, veterinary ethics, teamwork with sponsoring veterinary/clinic, value of professional organizations, animals and animal care in Alaskan culture, veterinary science wet lab (physical examination, suturing). (prereq. - none).

VTS 110 - Veterinary Medical Terminology and Communication. Topics: Culture perspectives on medical terminology. Medical and prescription terminology. Communicating by remote technology to your sponsoring veterinarian.

VTS 130 - Animal Anatomy and Physiology. Topics: Anatomy of dog, cat, avian, cattle, hog, sheep, goat, horse, reindeer, musk ox, bison. Integrated anatomy (body systems/ physiology). (prereq. - VTS 101).

VTS 140 - Animal Husbandry. Topics: Animal restraint, behavior, handling, species and breed ID, humane animal care, housing, management of farm animals, sled dog management, reproduction. Species covered: Canine, feline, goat/sheep, pig, horse, cattle, bison, reindeer, musk ox, exotic, lab animal. Alaskan Native perspective on the human-animal relationship. (prereq. - VTS 101).

VTS 150 – Animal Nutrition and Feeding. Topics: Nutritional analysis of feed, soil sampling, nutritional requirements of domestic animals (Cattle, hogs, sheep, goat, horse, reindeer, bison, musk ox, cat, dog) , feeding techniques, storage of feeds, feed contamination analysis. (prereq. - VTS101).

VTS 160 - Animal Diseases and Medicine. Topics: Diseases and treatment of companion animals, sled dog , farm animals(incl. reindeer, musk ox, bison), exotic and lab animals. Parasites of Alaskan animals. (prereq. - VTS101).

VTS 199 - Veterinary Science Practicum. Topics: On site participation at an approved large or small animal veterinary clinic, veterinary research laboratory or fish and wildlife disease research project. (prereq. VTS101).

Veterinary Technician Track

If not already completed, Math 107X (4 cr) and the above listed courses plus the courses below. After completion the student would be eligible to sit for the veterinary technician national examination.

Additional courses required:

VTS 199 - Veterinary Science Practicum	6 cr
VTS 200 - Veterinary Nursing	3 cr
VTS 210 - Veterinary Office Management and Economics	2 cr
VTS 220 - Humane Euthanasia	1 cr
VTS 230 - Veterinary Anesthesia	2 cr
VTS 240 - Veterinary Pharmacology	2 cr
VTS 250 - Current Issues in Veterinary Technology	2 cr
VTS 260 - Veterinary Preventative Medicine and Dentistry	2 cr
VTS 270 - Principles of Imaging	2 cr
VTS 280 - Veterinary Pathology	3 cr
Total	23 cr

Course Descriptions

VTS 199 - Veterinary Science Practicum. Topics: Clinical experience in a program approved veterinary clinic or AVMA equivalent. (prereq. - Vet. Science cert.)

VTS 200 - Veterinary Nursing. Topics: Nursing care of domestic animals (inclusive of reindeer, musk ox, bison). Surgical nursing. Instrument care and sterilization. Sterile technique. Emergency and remote nursing. (prereq. - Vet. Science cert.)

VTS 210 - Veterinary Office Management and Economics. Topics: Office procedures and record keeping, computer skills, veterinary legal issues, veterinary ethics, ethics of rural Alaska, economics of veterinary medicine in a rural and subsistence economy. (prereq. - none)

VTS 220 - Humane Euthanasia. Topics: American Humane Society or HSUS approved humane euthanasia techniques. Euthanasia of large and wild animals. Pet overpopulation, spay and neuter of domestic animals. Responsible genetics and breeding. Graduates of this course are eligible to apply for a state license for euthanasia with the sponsorship of a government or shelter organization. (prereq. - none)

VTS 230 - Veterinary Anesthesia. Topics: Principles and techniques of sedation and anesthesia. Patient monitoring, anesthetic agents and instruments. Record keeping. Control substance storage and logs. (prereq. - Vet. Science cert.)

VTS 240 - Veterinary Pharmacology. Topics: Classes and uses of medications. Pharmacy mathematics. Communication with supervising veterinarian. Prescription dispensing and labeling. (prereq. - Vet. Science cert.)

VTS 260 - Veterinary Preventative Medicine and Dentistry. Topics: Principles and techniques of immunization, worming, examination, record keeping. Large and small domestic animals. Dentistry of dog, cat and equine. (prereq. - none)

VTS 270 - Principles of Imaging. Topics: Principles and techniques of radiology and ultrasonography. Techniques for large and small domestic animals. (prereq. - Vet Science cert.)

VTS 280 - Veterinary Pathology. Topics: Techniques of microscopy and clinical pathology, laboratory sampling and culture, tissue collection, necropsy, blood collection, laboratory equipment training. (prereq. - VTS101)

Veterinary Medical Illustration Track

Courses listed for Veterinary Science plus courses listed below. Graduates would be able to find employment as a medical illustrator.

VTS 135 - Veterinary Medical Illustration 1	3 cr
VTS 136 - Veterinary Medical Illustration 2	3 cr
Total	6 cr

Course Descriptions

VTS135, 136 Veterinary Medical Illustration 1 & 2. Topics: Anatomy review. Techniques of illustration. Computer illustration techniques. (prereq. - VTS130)

Pre-Veterinary Track

Courses listed for Veterinary Science plus those listed below. Graduates would be able to apply for admission to a veterinary college.

Additional courses required:

Engl 211x or 213x	3 cr
Comm 131x or 141x	3 cr
Chemistry 106x	4 cr
Chem 321 - Organic Chemistry	3 cr
Chem 322 - Organic Chemistry	3 cr
Chem 324 - Organic Laboratory	4 cr
Chem 451 - General Biochemistry	3 cr
Phys 103x	4 cr
Phys 104x	4 cr
Biol 105x	4 cr
Biol 362 - Principles of Genetics	4 cr
Total	39 cr

Course Cycle:

Course	Fall 2006	Spring 2007	Fall 2007	Spring 2008
Math 107x or VTS 115	X			
Chem 103x or Chem 105x	X			
VTS 101	X			
VTS 110	X			
Biol 103x or Biol 105x		X		
VTS 130		X		
VTS 140		X		
VTS 150			X	
VTS 160			X	
VTS 170			X	
VTS 199				X

Learning Track Cycles:

Veterinary Technology:

Course	Spring 2008	Fall 2008	Spring 2009
VTS 199	X	X	X
VTS 200	X		
VTS 210	X		
VTS 220	X		
VTS 230		X	
VTS 240		X	
VTS 260		X	
VTS 270			X

VTS 280

X

Veterinary Medical Illustration:

Course	Spring 2008	Fall 2008
VTS 135	X	
VTS 136		X

Requirements for the Certificate:

To receive a Veterinarian Science Certificate, students must attain 35-36 credits of lower division (100-200 level) courses. The requirements include 9-10 credits of general university requirements, computations, communications and human relations, a four credit entry level Biology course, a four credit entry level Chemistry course and 21 credits of required Veterinary Science courses.

Proposed Catalog Description

Veterinary Science Certificate with learning tracks in Veterinary Technology or Veterinary Medical Illustration.

College of Rural and Community Development
 Interior-Aleutians Campus (907) 474-5439
 Chukchi Campus (907) 442-3400

Veterinary Science Certificate:

Training in veterinary science and medicine provides a strong base for careers in farming, dog mushing, wildlife management, public health, tribal resource management, environmental health, veterinary technology and as a veterinarian. Incorporated into these courses are information and training for work with domestic small animals, domestic farm animals, reindeer, bison and musk ox. The courses provide a unique insight by including Alaska Native knowledge, terminology, and ethics. Certificate graduates are prepared to continue on in learning tracks for veterinary technology, public health, wildlife diseases, veterinary medical illustration and veterinary medicine.

Complete the general university requirements (page ____)

- Complete the following certificate requirements:

Communications	
English 111X	3 cr
Human Relations	
ANTH/SOC 100X Indiv, Society, and Culture	3 cr or
ABUS 154 Human Relations	3 cr
Computation	
Math 107x Functions for Calculus	4 cr or

VTS 115 Math for Veterinary Science	3 cr
2. Complete the following program requirements:	
Chem 103x Basic General Chemistry or	4 cr
Chem 105x General Chemistry	
Biol 103x Biology and Society or	4 cr
Biol 105x Fundamentals of Biology	
VTS 101 Introduction to Veterinary Science	2 cr
VTS 110 Veterinary Medical Terminology and Communication	2 cr
VTS 130 Animal Anatomy and Physiology	3 cr
VTS 140 Animal Husbandry	3 cr
VTS 150 Animal Nutrition and Feeding	3 cr
VTS 160 Animal Diseases and Medicine	3 cr
VTS 199 Veterinary Science / Technician Practicum	2 cr
Total	35-36 cr

Veterinary Technician Track:

1. Complete the Veterinary Science Certificate plus the following courses, totaling 26 additional credits. After completion the student will be eligible to sit for the veterinary technician national examination.

VTS 199 Veterinary Science / Technician Practicum	6 cr
VTS 200 Veterinary Nursing	3 cr
VTS 210 Veterinary Office Management and Economics	1 cr
VTS 220 Humane Euthanasia	1 cr
VTS 230 Veterinary Anesthesia	2 cr
VTS 240 Veterinary Pharmacology	2 cr
VTS 260 Preventative Medicine and Dentistry	2 cr
VTS 270 Principles of Imaging	2 cr
VTS 280 Veterinary Pathology	3 cr
Total	23 cr

Medical Illustration Track:

1. Complete the Veterinary Science Certificate plus the following courses, totaling 6 additional credits.

VTS 135 Veterinary Medical Illustration 1	3 cr
VTS 136 Veterinary Medical Illustration 2	3 cr
Total	6 cr

B. PROGRAM GOALS

1. Objectives and Outcomes-Based Evaluation:

a) Objectives

Goals: To provide a rural oriented, culturally sensitive veterinary science training program for the Interior Aleutians/Chukchi Campus areas

This program aims to provide students with the skills needed for positions in veterinary technology, large animal husbandry, bison, musk ox and reindeer husbandry, tribal resource management, wildlife management, public health and medical illustration. There is a direct relationship between the program content and the expressed needs of rural Alaska.

This program will:

- Develop a personal student support team to include one person willing to provide tutorial, mentorship, and academic support for each student.
- Assist each student in tailoring and maintaining an Individual Educational Plan for life skills and work-related skills development.
- Guide the development of a Student Career Portfolio which will serve as a toolkit for work related activity for each student in the rural workforce.

- Provide culturally appropriate instruction and academic programs to meet rural student and rural industry needs by providing education that parallels life ways and life cycles.
- Promote skill development that integrates wellness, self-sufficiency and community development.

b) Student Learning Outcomes Assessment

The following attributes will be part of a checklist to track student progress and individual change in learning levels. According to research and discussions with tribal employers on student outcomes assessments, these attributes are what employers are seeking in their employees.

- Well-developed logic and reasoning skills, including critical thinking and problem-solving abilities.
- Independent goal-setting and decision-making skills.
- Animal handling and husbandry skills.
- Strong interpersonal skills in professional ethics and behavior and team-work with other veterinary science/medicine workers.
- Student progress will also be tracked utilizing a determined learning strategy involving two main instruments: an Individual Educational Plan and a Student Career Portfolio. Each student with the help of an academic advisor will be required to organize a personal support team to include a veterinarian, veterinary technician or fish and wildlife mentor.

The *Individual Educational Plan (IEP)* is a critical guide to student progress and process of education in a rural-based learning environment.

The IEP for each student enrolled in the Veterinary Science Program (VTS) must include each of the following:

- A list of job related skills to attain by end of the learning experience. The list may be a specific description of a current or potential job in rural Alaska.
- A timeline for completing the program and earning a Veterinary Science Certificate. The timeline should use semesters as specific periods of definite skill development.
- A schedule of coursework matching a specific semester-based timeline and an identifiable list of job related skills.
- A financial plan for tuition, books, and supplies. The plan should include personal, family, and community support as well as tribal, state, federal, and other means of financial aid.

The *Student Career Portfolio* is a statement, which demonstrates the achievement of specific goal related skills and competencies as well as the individual accomplishments of a student enrolled in the Veterinary Science Program. It documents the goals of student knowledge, skills, and abilities to work as a veterinary technician, public health officer, tribal resource manager, wildlife disease specialist, animal husbandry worker or consultant in rural Alaska. The Student Career Portfolio should be developed to meet Veterinary Science Program standards.

The *Student Support Team* must include one person willing to work with a specific student throughout a predetermined learning cycle. The Team will be the support and source of encouragement and guidance for the student and will consist of a veterinarian, veterinary technician or fish and wildlife employee.

The Student Support Team will:

- Have access to the student's Individual Educational Plan and Student Career Portfolio on a regular and frequent basis (preferably on a monthly basis).
- Provide mentorship opportunity where applicable to skill and career development.
- Impart academic advising to insure an understanding of the postsecondary educational system.
- Hold the student accountable for each level or type of skill area or erudition.
- Encourage completion of each step toward a certificate in Veterinary Science.

2. **Relationship to UAF mission**

The University of Alaska Fairbanks, as the nation's northernmost Land, Sea, and Space Grant university and international research center, advances and disseminates knowledge through creative teaching, research, and public service with an emphasis on Alaska, the North and their diverse peoples.

The Veterinary Science Program was created by the Interior-Aleutians and Chukchi campuses, in cooperation with rural and area veterinarians, veterinary technicians, and community representatives. This advisory board comes from rural Alaskan villages served by these campuses as well from urban Alaska. As such the VTS program is a collaborative program between the University of Alaska Fairbanks, many tribal and local government organizations statewide and the veterinary community. The alliance between the Interior-Aleutians Campus and other rural campuses makes the VTS a model program suitable for replication in other academic disciplines statewide.

Veterinary Science represents an area of vocational/technical expertise that is increasingly desired and needed by rural Alaska's employment base and industry demands. The university is committed to meeting these vocational/technical requirements.

With respect to the University's mission and speeches made by the current University administration, the University of Alaska Fairbanks is committed to assisting people in adapting to the new and evolving state and federal legislation. According to the State Department of Labor statistics, employment opportunities have increased throughout rural Alaska. The demand for relevant education within rural Alaska continues to grow as more money is being funneled through the local governments to address local concerns and needs.

3. **Occupational Competencies to be achieved:**

In accordance with an Individual Educational Plan, student must attain proficiency in specific skills and competencies. The skills and competencies are part of the overall education required to work effectively in the field of Veterinary science. The educational goals of the veterinary technician track will lead to the ability for the student to sit for the national board exam for veterinary technicians.

4. Relationship of Courses to Program Objectives:

Courses directly serve program objectives by:

- a) Providing opportunity to practice skills required to work in veterinary science fields.
- b) Providing culturally appropriate learning techniques and ethics.
- c) Using a delivery format designed to accommodate Native learning styles and rural locations.
- d) Making extensive use of statewide and regional Native resources.

III. PERSONNEL DIRECTLY INVOLVED WITH PROGRAM

A. FACULTY INVOLVED

Susan Andrews, Professor, ENGL/JB, Chukchi
Judy Atkinson, Assistant Professor, MATH, Rural College
Jodi Bailey, Instructor, ITS, Interior-Aleutians Campus
Jennifer Carroll, USDA Drum Beat Program Manager, Interior-Aleutians Campus
Jerah Chadwick, Professor, ENGL, Interior-Aleutians Campus
Clifton "Corky" Corkern, BIOL, Kuskokwim Campus
John Creed, Professor, ENGL/JB, Chukchi
Carol Lee Gho, Assistant Professor, MATH, Interior-Aleutians Campus
George Guthridge, Professor, ENGL, Bristol Bay Campus
Michael Hannigan, Associate Professor, SWK, Northwest Campus
Patricia Harding, Assistant Professor, SWK, Chukchi Campus
Ronald Illingworth, Professor, ENGL, Interior-Aleutians Campus
Eric Jayne, Assistant Professor, VTS, Interior-Aleutians Campus
Martin Leonard, Assistant Professor, ITS, Kuskokwim Campus
Julie Maier, Assistant Professor, SCI, Interior-Aleutians Campus
G. Joe Mason, Associate Professor, ENGL, Northwest Council
Zeina Nehme, Assistant Professor, MATH, Northwest Campus
Roger Nelson Rothschild, Assistant Prof, CHEM, Kuskokwim Campus
Brian Rasley, Assistant Professor, CHEM, Bristol Bay Campus
Sidney Stephens, Assistant Professor, SCI, Interior-Aleutians Campus
B.J. Wolter, Assistant Professor, BIOL, Northwest Campus
Victor Zinger, Assistant Professor, MATH, Bristol Bay Campus

B. ADMINISTRATIVE AND COORDINATING PERSONNEL

Resumes for key personnel attached as an addendum.

1. Clara Johnson, Director, Interior-Aleutians Campus, College of Rural and Community Development.
2. Eric Jayne, Program Development Specialist, Interior-Aleutians Campus, College of Rural and Community Development.
3. Lou Brown, USDA Drum Beats Program Manager, Interior-Aleutians Campus, College of Rural and Community Development.

C. CLASSIFIED PERSONNEL

1. 50% part-time administrative assistant is available to this program and is funded by USDA Higher Education Grant, Drum Beats place appropriate careers for Alaska Native Students until 2010.
2. Staff support from the Interior-Aleutians Campus is available to the program as needed.

IV. ENROLLMENT INFORMATION

A. PROJECTED ENROLLMENT

Information gathered through a survey conducted in spring 2005 shows a high interest in a Veterinary Science program. This survey was done in 39 villages served by the I-AC and Chukchi College. Interested college age student numbers are approximately 100 (110 actual). Of these approximately 50 (52 actual) are Alaskan Native students. Interested junior and high school age students are approximately 150 (146 actual). Of these approximately 100 (112 actual) are Alaskan Native students.

The VTS program will of necessity have an annual enrollment cap of 30 students. This cap ensures the quality of training of students. An enrollment limit is also required as part of AVMA certification of the program. The AVMA certification is required for eventual veterinary technician licensing. It is expected that the number of interested students, particularly Alaskan Native students, will continue to rise as more high school age students graduate and seek education.

B. MINIMUM ENROLLMENTS NEEDED

The minimum enrollment to maintain the program is twenty students per year for the next four years.

C. MAXIMUM ENROLLMENTS

The maximum enrollment the program can accommodate is 30 students. This enrollment cap is essential for quality in course delivery. An enrollment cap is required for AVMA certification of this program.

D. SPECIAL RESTRICTIONS

None.

V. NEED FOR THE PROGRAM

A. VTS SURVEY (see attachment A)

An onsite survey was done in 39 rural villages. These villages span an area from Northway to Kotzebue and are all served by the I-AC and Chukchi Campus. They represent over one half of the villages served by I-AC and Chukchi Campus. The survey queried local people about 1.) support for this program 2.) the names of potential students 3.) the number of veterinary visits per year 4.) presence of a trained, licensed veterinarian or veterinary technician 5.) potential for employment of a VS graduate locally 6.) status of current rabies education and lay vaccination 7.) wildlife disease issues 8.) interest in dog mushing, 9.)

interest in domestic farming 10.) interest in reindeer, bison or musk ox husbandry. The survey demonstrated an overwhelming need, interest and support for the VTS program. Over 1000 people were queried (1100 actual). Of these only one person was opposed to the program. This person was currently working as an untrained, unlicensed veterinary technician in Kotzebue and was concerned that she may not be able to practice should a licensed vet tech be available.

Of the villages surveyed only one has a resident veterinarian (Cantwell). Ten villages have a veterinary visit 4-6 times per year. The remainders have a veterinary visit of 1-2 times per year. The presence of a trained and licensed veterinary technician person will enhance the preventative and emergency care available in these areas. It will also encourage more veterinary visits by the VTS sponsoring veterinarian. Currently no licensed veterinary technician lives in any of the survey areas.

The survey also shows that the majority of villages have public health and wildlife disease concerns. The public health concerns include rabies education and vaccination (30 villages), zoonotic diseases (35 villages).

The potential and desire for domestic, bison, reindeer and musk ox farming exists in 18 surveyed villages. A root of success for this is the ability to deal with nutrition, diseases and husbandry issues. A trained VTS worker would be able to contribute to this need. Furthermore dog mushing is becoming more popular in a majority of the villages (28 villages). Dogs are used increasingly for travel, trap lines, hauling, recreation and racing. This also has a strong cultural element. A licensed vet tech in each village would be able to deal with animal health issues under the supervision of a licensed veterinarian.

B. Articulation with other degrees

The VTS certificate articulates well with the Associate of Science, Bachelor of Science, Masters and Doctorate degrees. It also is a strong educational stepping stone toward a degree in veterinary medicine (DVM). The VTS certificate requirements will fulfill 18 of the general Associate of Science degree requirements. In addition 20 of the 23 specialized VTS courses can be used to fulfill the specialization course requirements of the Associate of Science program.

C. EMPLOYMENT MARKET NEEDS

The survey identified a local employment potential of 36-42 jobs in the 39 villages surveyed. These jobs include veterinary technician, tribal resource management, wildlife disease inspection, fish and game personnel and public health. The numbers were determined by survey question. In addition outside employment (non-village) is readily available for a licensed veterinary technician, medical illustrator, or public health worker. Farm animal, equine, bison, reindeer, and musk ox husbandry careers are dependant on individual motivation. The fact that several bison and reindeer farms already exist in the survey areas suggests that this motivation is present. Several villages (Stevens Village, Fort Yukon and Beaver) have already been investigating the potential of private bison herds.

The interest for dog mushing is also on the rise in rural Alaska. 31 of the 39 villages surveyed have active dog musher's. Culturally dog mushing is very important. It services as a bridge between the past and the future in Native Alaska. The value of role model dog musher's can not be calculated in dollar amounts. They are invaluable to the community. Dog mushing also plays

an important part in the subsistence economy of rural Alaska. The use of dog teams for trap lines, wood, water and travel is on the rise. This use should be expected to rise as the price of gas goes up.

My mother was Effie Kokrine, my father was Andrew Kokrine. They were both champion dog musher's back in the 1940's and 1950's. They moved to Fairbanks from Tanana in 1949. They always had a team of dogs in the yard. Their dog team was their only means of transportation in the winter when they lived on the river. They depended heavily on their dogs, and took as good care of the dogs as they could.

My father ran the mail run from Tanana to Wiseman when he was a young man. He said that they had to feed the dogs really heavy, with fish and tallow, when they were on the trail because the dogs worked so hard.

Musher's fed their dog's fish, meat scraps, and oatmeal, if they had some. If they were at home, and not out on the trail, they would cook for their dogs, using water. That was the only water the dogs normally got in the winter. People did water their dogs in the summer when it was warmer.

It wasn't until Doc Lombard started racing dogs in Alaska that musher's started learning how to take better care of their dogs. Doc Lombard was a veterinarian who started competing in the North American Championship in the 1950's. He won many races and had a good strong team. He started teaching other musher's how to take care of their dogs, vaccinating them regularly, the importance of watering the dogs regularly, and about balanced diets. A lot of what Doc Lombard taught the musher's was new information to them. People did not used to have regular veterinary care for their teams. Mom had to stitch dogs up when they suffered a cut or got torn up in a dog fight. If they were too badly hurt they had no alternative but to put the dog down.

My mother and father loved their dogs, they loved running their dog teams. Every time there was a full moon my mother would long for the days that she used to run dogs on the river at night under a full moon. She kept two dogs in her yard in Graehl, here in Fairbanks, and used to hook them up to a sled and take a ride down the slough onto the Chena River until she was in her late 70's. She had to stop when the City built a new road and blocked access to the river. She still ran dogs in fun races at the Jeff Studdard Race Track until she passed away at age 82.

Annette Freiburger, Coordinator, Nenana Center

VI. RESOURCE IMPACT

A. BUDGET

Program development and initial VT faculty salary is supported by the United States Department of Agriculture Alaska Native/ Native Hawaiian (AN/NH) Serving Institutions Education grants program. This project addresses the USDA goal of increasing the number of AN/NHs engaged in USDA careers. These careers include, among others, Veterinary Medicine/Science and increasing the number of students entering Associates of Sciences programs that articulate into Bachelor and Masters of Science.

Because USDA's interest is, ultimately, in bringing more AN/NHs into USDA careers at the bachelors and masters level, the above mentioned grant will fund the current effort until at least 2010. USDA support currently stands at one half-time Vet Tech faculty member to teach and develop the program plus funding for a total of 12 Alaska Native students to complete the VT certificate program within approximately three years. IAC English faculty will dedicate 10% time to development of the Associates contributing a total of \$10,747 in Fund 1 dollars. Another \$42,650 in salaries and benefits will come from the same program for support staff (program assistant, web technician and media technician in addition to 5% of time dedicated by Clara Johnson, Director of the Interior-Aleutians Campus in the role of co PI on the project.

An additional audience for the program will be developed by virtue of a new Alaska statute which requires that all veterinary technicians seeking a license in the state will need to complete an approved veterinary technician program. This requirement in combination with increased student numbers as junior and high school students reach college age should create a financially viable program as increased tuition and fees subsidize costs of course delivery.

As regards tuition income from the Veterinary Science program, if 30 students complete the 38 credit program in one year, a total of 1140 credit hours will be generated. At an estimated \$110 per credit hour, the program will generate \$125,400 per year in income for the University.

Students wishing to obtain the additional state certification as a Veterinary Technician mentioned above will be required to complete an additional 23 credits. Assuming that out of the original 30 students per year 25% of them decide to complete the additional training, 8 students would contribute another \$20,240 annually.

FACILITIES/SPACE NEEDS

Office and classroom space will be provided by existing University rural campuses and regional nonprofit training centers throughout Alaska. Some of the rural communities with available facilities include Galena, Fort Yukon, and Kotzebue. In villages without a University facility, training space can be found in the private sector and reasonably supported by tuition fees and veterinary grants (e.g. DJ & T Foundation). The goal will be to provide a working veterinary clinic space in Kotzebue, Galena, Fort Yukon, McGrath and Fairbanks. The Kotzebue, Galena and Fort Yukon facilities will be on UAF property or in Vocational centers. The McGrath site will be a donated private clinic location. In the Fairbanks area local veterinarians have offered their clinics for internships and training. Science facilities are available at UAF Fairbanks and will be available soon in Fort Yukon. Local high schools in Kotzebue, Galena and McGrath have offered science room space for pertinent science labs.

B. CREDIT HOUR PRODUCTION

The program will provide a significant increase in credit hours for the University and will draw new students from an untapped pool by providing culturally relevant and skills-based education. Based on an average enrollment projection of 30 students graduating per semester the VTS and related tracks will generate 2110 credit hours per semester.

C. FACULTY

The faculty required is a licensed veterinarian and a licensed veterinary technician. These are required by the AVMA for accreditation. Currently there is a full time licensed veterinarian on staff, Eric Jayne, DVM. A full time veterinary technician will not be necessary until the program reaches maturity in 2008. In addition various adjunct professors will be hired for VTS courses.

D. LIBRARY IMPACT

Most of the information for this program has been created and developed by participating UAF programs and regional nonprofit organizations. The impact on library resources will be limited to Internet based resources with information transmission and book mailing done by library staff.

As the University continues to upgrade its capacity to address the growing need for adequate education in rural Alaska, specifically with regard to the distance delivery process and audio equipment, the Veterinary Science Program will be made readily available to more students.

VII. RELATION OF PROGRAM TO OTHER UNIVERSITY PROGRAMS

A. EFFECTS OF ENROLLMENT ELSEWHERE IN THE SYSTEM

This program has the potential of impacting student enrollment in other programs within the University of Alaska system. A majority of the students are non-traditional students who are not otherwise enrolled in University programs or courses.

This Certificate program does provide entry access to the proposed AS degree, which for some students will lead to further academic education in a bachelors and masters programs such as those offered by the University of Alaska Fairbanks Rural Development Department. It is anticipated the VTS program will draw students into the pre-veterinary program and a career in veterinary medicine.

B. DUPLICATION/APPROXIMATION OF OTHER UNIVERSITY PROGRAMS

There is no duplication or approximation of other programs. At present there is no Certificate or Associate program designed specifically to serve the Veterinary Science needs of rural and urban Alaska.

C. RELATION TO RESEARCH AND SERVICE ACTIVITIES

1. Research

While research is not a primary focus of this program, it is a unique model which will be documented and shared throughout the academic community. This program will produce a wealth of information in student outcomes assessments, changes in academic programs

and teaching style, and other information relating to workforce and skill development in rural Alaska.

2. Service

The Veterinary Science program is part of a comprehensive plan to spread academic education throughout the state and in every rural community. The program will provide a much needed and sought-after service to rural Alaska's tribal and local government, fish and game, public health and private veterinary workforce.

VIII. IMPLEMENTATION/TERMINATION

A. DATE

The program is expected to be in the University of Alaska Fairbanks catalog and available in the fall semester of 2006. Courses will be piloted in the fall semester of 2005 and spring semester of 2006.

B. PLANS FOR RECRUITING STUDENTS

The promotion for this new program throughout the state will be done in cooperation with local and tribal governments, regional for-profit and nonprofit Native corporations, rural University campuses and centers, tribal colleges, licensed veterinarians and rural high schools. Upon approval, the Interior-Aleutians Campus is prepared to market the program with brochures, a website, and other conventional methods of student recruitment.

Preliminary marketing and research of the idea for the new program shows a tremendous interest in this program. Therefore it should be noted that the market is already preparing to take advantage of the coursework and the process for accreditation for tribal management skill development. Rural students are already taking classes that may count toward the Veterinary Science Certificate. For instance, the hands on portion of the Introduction to Veterinary Science course has been taught for over 4 years in a multitude of villages with widespread enrollment and interest (special topics - Basic Veterinary Care for the Alaskan Bush)

This is an ongoing program with no termination date.

C. PLANS FOR PHASING OUT PROGRAM IF UNSUCCESSFUL

As this program does not involve new equipment or other major program investment, the phasing out process should only involve the assurance of program completion by existing students.

If it becomes necessary to close the program, Veterinary Science program students will be provided the opportunity to complete the University requirements for the Certificate.

D. ASSESSMENT OF THE PROGRAM

The program will be assessed through ongoing student and faculty evaluation. The Career Portfolios created by the VTS students will also be used to analyze and evaluate the program content and course offerings. The Council of Advisors, Interior-Aleutians Campus, AVMA as well as other rural campus staff will review the program courses annually.

IX. REGENTS GUIDELINES

The Interior-Aleutians Campus, College of Rural and Community Development, University of Alaska Fairbanks, requests approval of a Veterinary Science Certificate Program to be implemented in Fall Semester, 2006.

Through courses delivered locally in the home communities of our students, the Veterinary Science Program will build the capacity of local governments in rural Alaskan villages to take control of assets and resources for economic enhancement.

In line with the mission of Interior-Aleutians Campus, the VTS program will provide educational opportunities for students throughout the state without requiring them to change or leave their culture or heritage. The Interior-Aleutians Campus is committed to educating Alaska Natives and rural residents, assisting them to affect social changes in their communities, thereby enriching the quality of their lives and cultures. Particular consideration is given to the needs of permanent residents and students in non-traditional settings who seek skills and degrees suited to the rural economy and to the well being of rural communities.

Due to the boom and bust cycles of Alaska's economic history, coupled with the thrust of Native peoples into the corporate world, many skills have been "imported" to regions by persons outside of the community and most often outside of the state. Many rural areas exist in a technology deficit, and the residents are becoming part of a "have-not" society. Given the lack of opportunity for education and employment as well as an infrastructure of tools for educational use, this challenge is especially poignant. The Veterinary Science program is an opportunity for students in rural Alaska to attain and maintain skills that sustain wellness, self-sufficiency, and on-going economic development.

ATTACHMENTS

Attachment A – Veterinarian Science Program Survey

Attachment B – AVMA Veterinary Technician Program Requirements

B. PROPOSED DEGREE PROGRAM
VTS Veterinary Science Program
Format 3

X.	XI. Fund 1	XII. Tuition	XIII. Grant	XIV.
XV. Resources	XVI. Existing	XVII. New		XVIII. Total
	College/School	College/School	Others (Specify)	
Regular Faculty (FTE's & dollars)	IAC: 10% English Faculty @ \$6,891 + benefits @ \$3,856		Vet Tech Faculty: 50% @ 9.5 months @ \$23,000 + benefits @ \$12,374	\$46,121
Adjunct Faculty (FTE's & dollars)				
Teaching Assistants (Headcount)				
Instructional Facilities (in dollars and/or sq. footage)			Communities of Ft. Yukon, Galena, Tok, McGrath and Kotzebue donate classroom space @ a minimum of 144 sf each.	
Office Space (Sq. footage)	100 sf + 80 sf			
Lab Space (Sq. Footage)				
Computer & Networking (in dollars)			USDA Grant: \$5,000	\$,5000
Research/ Instructional/ office Equipment (in dollars)				
Support Staff (FTE's & dollars)			Program Assistant: 50% @ 12 months: \$16,786 +	

			benefits @ \$8,393 Media Technician: 20% @ 12 months: \$7,268 + benefits @ \$3,634 Web Technician: 2% @ 12 months: \$1,132 + benefits @ \$448	\$37661
Supplies (in dollars)			USDA Grant: \$8,032	\$8,032
Travel (in dollars)			USDA Grant: \$20,310	\$20,310

Signature _____
 Dean of College/School Proposing New Degree Program Date _____