University of Alaska Fairbanks

New Degree Program Request: Format 3

ETHNOBOTANY PROGRAM

Certificate
33-36 Credits minimum

Submitted by
Kuskokwim Campus
College of Rural and Community Development
September 2008
# TABLE OF CONTENTS

I. **COVER MEMORANDUM** ........................................................................................................... 2  
   A. NAMES OF PERSONS PREPARING REQUEST ....................................................................... 2  
   B. BRIEF STATEMENT OF PROPOSED PROGRAM ................................................................... 2  
   C. APPROVALS ......................................................................................................................... 7  

II. **IDENTIFICATION OF THE PROGRAM** ................................................................................. 8  
    A. DESCRIPTION OF THE PROGRAM ....................................................................................... 8  
    B. PROGRAM GOALS .............................................................................................................. 14  

III. **PERSONNEL DIRECTLY INVOLVED WITH PROGRAM** ........................................................ 17  
    A. FACULTY INVOLVED .......................................................................................................... 17  
    B. ADMINISTRATIVE AND COORDINATING PERSONNEL .................................................... 18  
    C. CLASSIFIED PERSONNEL ................................................................................................. 18  

IV. **ENROLLMENT INFORMATION** ............................................................................................. 19  
    A. PROJECTED ENROLLMENT ................................................................................................. 19  
    B. METHOD OF ENROLLMENT DETERMINATION ................................................................... 19  
    C. MINIMUM ENROLLMENTS NEEDED .................................................................................. 21  
    D. MAXIMUM ENROLLMENTS ............................................................................................... 21  
    E. SPECIAL RESTRICTIONS ..................................................................................................... 21  

V. **NEED FOR THE PROGRAM** .................................................................................................. 21  
    A. REQUIREMENT FOR OTHER PROGRAMS .......................................................................... 21  
    B. EMPLOYMENT MARKET NEEDS ....................................................................................... 23  

VI. **OTHER (EBOT ALASKA NATIVE/NATIVE HAWAIIAN STUDENT EXCHANGE)** ..................... 25  

VII. **RESOURCE IMPACT** ............................................................................................................ 25  
    A. BUDGET (SEE APPENDIX D) ............................................................................................. 25  
    B. FACILITIES/SPACE NEEDS ............................................................................................. 26  
    C. CREDIT HOUR PRODUCTION ............................................................................................ 26  
    D. FACULTY ............................................................................................................................ 26  
    E. LIBRARY IMPACT .............................................................................................................. 26  

VIII. **RELATION OF PROGRAM TO OTHER UNIVERSITY PROGRAMS** .................................... 26  
    A. EFFECTS OF ENROLLMENT ELSEWHERE IN THE SYSTEM ................................................... 26  
    B. DUPLICATION/APPROXIMATION OF OTHER UNIVERSITY PROGRAMS ................................ 27  
    C. RELATION TO RESEARCH AND SERVICE ACTIVITIES ..................................................... 27  

IX. **IMPLEMENTATION/TERMINATION** ...................................................................................... 28  
    A. DATE ................................................................................................................................... 28  
    B. PLANS FOR RECRUITING STUDENTS ............................................................................... 28  
    C. TERMINATION DATE .......................................................................................................... 28  
    D. PLANS FOR PHASING OUT PROGRAM IF UNSUCCESSFUL ............................................... 29  
    E. ASSESSMENT OF THE PROGRAM ...................................................................................... 29  

IX. **REGENTS GUIDELINES** ...................................................................................................... 33  

APPENDICES  
A. ETHNOBOTANY ADVISORY BOARD MEMBERS .................................................................. 39  
B. ETHNOBOTANY ELDER COUNCIL MEMBERS ..................................................................... 41  
C. RESUMES OF ETHNOBOTANY PERSONNEL ....................................................................... 44  
D. RESOURCE COMMITMENT FORM ....................................................................................... 56  
E. EXAMPLES OF EBOT RECRUITMENT POSTERS AND LOGO .............................................. 57  
F. ADVISORY BOARD LETTER OF SUPPORT ......................................................................... 59
I. COVER MEMORANDUM

A. Names of person preparing request

This request was prepared by Rose Meier, PhD, Ethnobotany Program Coordinator, Assistant Professor, Kuskokwim Campus; in collaboration with Mary C. Pete, Director, Kuskokwim Campus; and Kevin Jernigan, PhD, Ethnobotany Assistant Professor, Kuskokwim Campus.

Advisors and discipline experts who helped create the proposal and who reviewed the many drafts include: Julie K. Maier, PhD, Assistant Professor, Interior-Aleutians Campus and CRCD Natural Science Division Chair; Ron Illingworth, Professor, Interior-Aleutians Campus; Ethnobotany Advisory Board Members (see Appendix A): Ann Garibaldi, Ethnobotanist, Jones and Associates, Victoria BC; Craig Gerlach, PhD, Professor, UAF Main Campus; Pat Holloway, PhD, Professor, UAF Main Campus; Betty Rogers, Science Teacher, St. Paul School District; Gloria Simeon, Ethnobotanical Entrepreneur, Bethel AK; Steffi Ickert-Bond, PhD, Professor, UA Museum; Charles Walsh, Ethnobotanical Entrepreneur, Anchorage AK; Ethnobotany Elder Council Members (see Appendix B): Mary Active (Togiak), Anna Alexie (Bethel), Cecelia Andrew (Chevak), Evon Azean (Kongiganuk), Annie Blue (Togiak), Rita Blumenstein (Anchorage), Julia Brown (Kongiganuk), Elsie Chimigalrea (Bethel), Joseph David, Jr. (Mekoryuk), Margie David (Mekoryuk), Ruthann Elia (St. Mary’s), Ben Flynn (Chefornak), Elena Fox (Bethel), Esther Green (Bethel), Mary Gregory (Bethel), Pauline Hunt (Kotlik), Lena Long (St. Mary’s), Marie Myers (Pilot Station), Modesta Myers (Pilot Station), Tim Myers (Pilot Station), Thecla Paul (Pilot Station), Gloria Simeon (Bethel), and Maryann Sundown (Scammon Bay); Carolyn Parker, Botanist, UA Museum; Oscar Alexie, Instructor, Kuskokwim Campus; Sophie Alexie, Instructor, Kuskokwim Campus; Tasha Goldberg, Ethnobotanist, Hawaii; Inge White, PhD, Professor, Windward Community College, Hawaii; Priscilla Millen, Professor, Leeward Community College, Hawaii; Kiope Raymond, Professor Maui Community College, Hawaii; Will McClatchey, PhD, Professor, University of Hawaii Manoa; Annie Cleveland, Elder in Residence at Ethnobotany Summer Field Course, July 2008, Quinhagak AK; UAF Main Campus Science Faculty and Administrators (all PhDs): Richard Boone, Joan Braddock, Terry Chapin, Thomas Clausen, Provost Susan Henrichs, Knut Kielland, Gary Laursen, Christa Mulder, Matthew Olson, Brian Rasley, Lee Taylor, Diana Wolf.

B. Brief statement of the proposed program

Overview:

Kuskokwim Campus’s (KuC) proposed Certificate in Ethnobotany (EBOT) will be the first program in the state of Alaska that will concentrate on traditional knowledge and uses of native plants by indigenous groups. It has grown out of a desire to maintain the traditional knowledge base that exists, to provide the educational foundation for further academic degrees, research, and entry-level positions; and to become the framework for potential development of new uses for native Alaskan plants. This certificate is designed to articulate into the Associate of Science (A.S.)
Indigenous plants play a major role in the everyday lives of all of Alaska’s rural residents. While the western term “ethnobotany” may not be recognized by many of these traditionalists, the importance of indigenous plants and the crucial roles that the flora of the region plays in food, medicine, and community well-being are recognized by all. The EBOT Program will build upon a substantial base of knowledge already in place within rural Alaska. EBOT instructors will be able to draw upon the copious local base of traditional knowledge, regionally-recognized traditional ethnobotanists, and traditional healers who have committed their lives to this science.

KuC is one of the two-year rural campuses of the College of Rural and Community Development (CRCD), University of Alaska Fairbanks (UAF), located in Bethel, Alaska. Bethel is 400 air miles west of Anchorage, the nearest metropolitan area, and lies 70 miles from the mouth of the Kuskokwim River on the Bering Sea. The KuC service area encompasses the Wade Hampton and Bethel census units, and the combined area of these two census units is 57,827 square miles - approximately the size of the state of Illinois. The region covers the lower delta area of the Yukon and Kuskokwim rivers (Y-K Delta). The natural landscape is primarily wet to moist tundra (treeless) with a maze of rivers, streams, ponds and lakes formed through eons of deposits by these two large rivers.

KuC serves 46, primarily Yup’ik/Cup’ik and a few Athabascan, villages with 56 tribes in the Y-K Delta and is the only institution of higher education located in this geographic area. Alaska Natives consistently comprise over 70 percent of the KuC student enrollment. The Yup’ik people are the largest group of Native Americans in Alaska to remain on their traditional lands, speak their native language, and practice a subsistence lifestyle. Year-round hunting, fishing, and related seasonal subsistence practices govern community and family life. Yup’ik/Cup’ik societies continue to emphasize traditional values related to the relationship between the people, the land and customarily used resources.

The proposed Certificate in Ethnobotany is being developed to address several interests. First, statewide statistics on higher education attainment for Alaskans are troubling. Only 28% of 9th graders in the state of Alaska enroll in college four years later. Only 18% are still enrolled in their sophomore year and only 6% graduate from college within six years (Source: NCES: Common Core Data, IPEDS Residency and Migration, Fall Enrollment, and graduation rate surveys, 2004). The educational needs in rural Alaska are particularly acute. High school graduation rates in the Y-K region are the lowest in the state. The results of needs assessments conducted by KuC in the Y-K region noted that many students show neither an aptitude for nor interest in science, technology, engineering and math (STEM) fields. Improving these statistics will involve effort on many fronts and one is developing programs that can engage students’ interest before they get to college, encouraging them to stay in school, enroll in college, obtain useful and marketable skills, and perhaps continue towards a four-year degree. Ethnobotany, a discipline that is intimately connected with the traditional lifeways of rural
Alaskans, is a program that can dramatically increase the number of rural students in university courses because it brings academic credence to a familiar and valued aspect of their subsistence lifestyle.

Secondly, there is no ethnobotany degree at the certificate, associate, baccalaureate, or post-graduate levels at any institution of higher learning in the state. With approval of this program, UAF will become the first institution in the United States to provide a Certificate in Ethnobotany (EBOT) and at the A.S level. Currently there are only a handful of colleges and universities in the whole of the United States that award degrees in Ethnobotany and all of them are at more advanced degree levels - either Bachelors or Masters degrees (McClatchey, et al, *An Evaluation of Educational Trends in Economic and Ethnobotany* February 1999 in CIEER - Centre for International Ethnomedicinal Education and Research). In addition, none of the Tribal Colleges in the US with certificate programs offer one in Ethnobotany. Currently, to become trained in Ethnobotany a student must attend an out of state program, as well as pay out of state tuition costs. A multi-year absence from Alaska may result in a student not returning to the state for employment. The EBOT program will provide students with the opportunity to gain academic credentials in a science-oriented field while remaining in their home communities.

Throughout the development of this program we have sought input from local experts both from rural communities and within UAF. An EBOT Advisory Board was assembled in 2006 to help guide the development of this program and it includes the following members (see Appendix A): Ann Garibaldi, Craig Gerlach, Pat Holloway, Stefanie Ickert-Bond, Betty Rogers, Gloria Simeon, and Charles Walsh. In addition we have solicited the expert knowledge and assistance of the EBOT Elder Council (see Appendix B) to help establish a baseline of current traditional knowledge and assemble information for the upcoming publication, *A Yup’ik Manual of Ethnobotany*, which will become the foundation for the EBOT program at KuC and a resource for the communities in the Yup’ik speaking region of Alaska.

The EBOT Program has strong potential for advancing and enriching experiential educational opportunities and offerings in science in rural Alaska. Grounding the new ethnobotany certificate in ethnoscienctific and ecological knowledge of Native Alaskans features a rich multidisciplinary foundation that will invite interest from beyond the Y-K region.

The State of Alaska has a great need for individuals trained in the sciences in both rural and urban areas. The EBOT Program, another option for students in the associate of science degree or a specialization for those who advance to baccalaureate programs in STEM fields at other campuses and universities, will offer a core EBOT certificate, including basic biology, chemistry, and math, from which the student can articulate to newly created A.S. degree at CRCD campuses. This program will be a rural-oriented program that is easily adapted for statewide delivery.

Additional employment and educational fields can be entered upon completion of this program. The program will provide a strong educational starting point for students interested in entering an undergraduate program, and students will be
able to continue their ethnobotanical studies in several different areas: Biology, Anthropology, Plant Sciences, Linguistics, Yup’ik Language, Education, and Art, for example. In addition, the EBOT certificate will provide a solid transition into other rural-centric programs such as Tribal Resource Management, Rural Development, and Alaska Native Studies.

Course work to complete the Ethnobotany certificate will take approximately two to five years as students entering this program will enter at many different skill levels. Highly motivated students can complete this program within the two-year time frame. Completion time is dependent on many factors affecting students, including number of classes taken per term, job, work, and family commitments. Classes will be delivered primarily by distance education, as well as face-to-face field courses and intensives at KuC, as needed.

Distance delivery in the Y-K region is now being enhanced by the recent partnership that KuC has made with a local phone company, United Utilities Inc. (UUI). Through this project, training of 12 village technology specialists (in communities where UUI has installed satellite towers to support Internet connectivity) is being supported. The agreement has provided nearly $67,000 to KuC for training (University of Alaska Kuskokwim Campus Component Budget Summary, State of Alaska FY08 Governors Budget, http://gov.state.ak.us/omb/08_OMB/budget12.15.07/UA/comp746.pdf).

Objectives of the EBOT Certificate program:
The Ethnobotany Certificate program fits well within the overall mission of CRCD by providing an entry-level academic area of study that focuses on the cultural and natural resources of the communities in the Y-K region. This area of Alaska represents one of the most culturally intact indigenous populations in the state and, indeed, in the United States as a whole. The communities are mostly subsistence-based, both in spirit and in economy. People of the region are still considered traditionalists; subsistence hunters and gatherers who combine primarily seasonally available wage employment. Few of the professional and managerial jobs are occupied by people from the region. The EBOT program will help to further the mission of Kuskokwim Campus (KuC) by providing new educational opportunities that will allow local people to gain the credentials they need to assume these leadership positions. This will promote economic development and community wellness, in addition to reducing the high cost of importing expertise and services. Students will also be able to investigate related areas of personal and community interest and need through the EBOT electives choices.

The EBOT program is designed to provide students with a smooth segue to the further pursuit of associate and baccalaureate programs.

Objectives of the EBOT Program:
- To provide quality interdisciplinary academic instruction in the areas of biology, botany, ecology, anthropology, and chemistry so that students may gain the skill
sets needed to become active stewards in natural and cultural resource management in their communities.

- To provide students, in their home communities, with an attractive, culturally relevant curriculum and an intermediate step in entering the associate and baccalaureate academic pathway in the sciences.

- To provide culturally relevant research opportunities for KuC students and faculty in the life sciences. Partnerships developed will include organizations such as UAF's Institute of Arctic Biology, US Fish and Wildlife Service, Alaska State Fish and Game, NIMA Corporation, Hawaii community colleges, the Pacific Alliance, Alaska Native Science and Engineering Program, etc.

- To provide training that can be used as a stepping stone to higher-level positions for an underemployed rural workforce.

- To promote awareness of the scientific significance and economic potential of Alaska’s native flora and model efforts supporting the development of regional economic ethnobotany initiatives and knowledge-based economies in the Yukon-Kuskokwim Delta and all of rural Alaska.
C. APPROVALS

Rose Meier
Program Coordinator, Ethnobotany, Kuskokwim Campus
Date (30 October 2008)

Director, Kuskokwim Campus
Date

Chair, Kuskokwim Campus Curriculum Committee
Date

Natural Science Division Chair,
College of Rural and Community Development
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
C. APPROVALS

N/A

Director, Kuskokwim Campus

N/A

Chair, Kuskokwim Campus Curriculum Committee

AS PER ATTACHED

Natural Science Division Chair,
College of Rural and Community Development

AS PER ATTACHED

Curriculum Council Chair,
College of Rural and Community Development

Dean, College of Rural and Community Development

President, UAF Faculty Senate

Chancellor, UAF

President, University of Alaska

Board of Regents
COLLEGE OF RURAL AND COMMUNITY DEVELOPMENT
ETHNOBOTANY

KUSKOKWIM CAMPUS
CERTIFICATE PROPOSAL FY2009

C. APPROVALS

__________________________  ______________________________
Director, Kuskokwim Campus  Date

__________________________  ______________________________
Chair, Kuskokwim Campus Curriculum Committee  Date

JULIE AK MAUR  10/22/08
Natural Science Division Chair,
College of Rural and Community Development  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
C. APPROVALS

Director, Kuskokwim Campus

Chair, Kuskokwim Campus Curriculum Committee

Natural Science Division Chair,
College of Rural and Community Development

Curriculum Council Chair,
College of Rural and Community Development

Dean, College of Rural and Community Development

President, UAF Faculty Senate

Chancellor, UAF

President, University of Alaska

Board of Regents
II. IDENTIFICATION OF THE PROGRAM

A. Description of the program

1. Program title: Ethnobotany (EBOT) Program

2. Credential level of the program: Certificate

3. Admission requirements and prerequisites:

An EBOT Program Certificate represents the completion of 30-32 credits in the interdisciplinary study of the role of native plants in cultures. The certificate emphasizes place-based course offerings that highlight the ways that this information contributes to other fields of study, such as cultural and natural resource management, community development, adaptive resilience, and human health. This certificate may serve as a bridge to a variety of natural science or liberal arts associate and baccalaureate programs.

Admission is open to all individuals, especially those employed by or interested in employment with state, federal, or tribal agencies; or other local entities in rural Alaska that provide natural resources management services.

Students should have a high school diploma or GED and an interest in science-related fields. It is strongly recommended that students seeking admission to this program have completed two high school, lab-based science courses preferably in biology, chemistry, or physics.

Students whose ACT/SAT scores are not high enough to place them into regular college level classes will be required to take the ASSET, or COMPASS, or Accuplacer test and will be placed into the appropriate developmental level course.

To remain in good standing, students must:

a) Maintain an overall 2.0 grade point average

b) Maintain a C grade or better in all required courses
4. Program outline and course descriptions

**EBOT CERTIFICATE**

1. Complete general university requirements, page 86 of 2008/2009 UAF Catalog

2. Complete the following certificate requirements..........................9-10 credits total
   
   a. Communication.....................................................3 credits
   
   b. Computation ....................................................3-4 credits
   
   c. Human Relations .................................................3 credits

3. Complete the following program requirements..........................21-22 credits total

   **Natural Science Core Courses (8 credits total)**
   BIOL 103X - Biology and Society ......................... 4 credits
   or
   BIOL 104X - Natural History of Alaska .................. 4 credits
   Or
   BIOL 116X - Fundamentals of Biology II..............4 credits*
   CHEM 103X - General Chemistry......................... 4 credits

   **Ethnobotany Core Courses (10 credits total)**
   EBOT 100*** - Introduction to Ethnobotany (piloted Summer 2008) ....3 credits
   EBOT 200**  - Seminar in Ethnobotany (piloted Fall 2007) ...............1 credit
   EBOT 210** - Ethical Wildcrafting (pilots Fall 2008)..................1 credit
   EBOT 220*** - Research Methods in Ethnobotany .......................2 credits
   EBOT 230*** - Ethnobotanical Chemistry .........................3 credits

   **Electives (any advisor-approved 100 or 200 level course, unless specified) from the following subject areas (total 6-8 credits):**
   ABUS, Applied Business
   ANL, Alaska Native Languages
   APAR, Applied Art
   ANTH, Anthropology
   ECON, Economics
   ED, Education
   ENGL 212, or ENGL 213X
   ESK, Eskimo
   BIOL, Biology
   NRM, Natural Resource Management

**Minimum Credits Required........................................30-32 credits total**

*Course requires additional prerequisites
**Course approved Spring 2008
*** Course submitted for approval Fall 2008
**EBOT Core Course Descriptions**

**EBOT 100 - Introduction to Ethnobotany (3 credits):** This course surveys basic concepts of botany and ethnobotany, with emphasis on the native flora of Alaska and how people use these plants. Students will gain a basic understanding of plant biology and taxonomy; scientific methods of plant collection, including identification and curation; as well as the use of native Alaska plants for food and medicines, ethnobotanical methods of collecting plant-use information from indigenous cultures, and ways that this information contributes to other fields of study, such as resource management, community development, and human health. (No prerequisite).

**EBOT 200 - Seminar in Ethnobotany (1 credit):** This course surveys basic concepts of ethnobotany and ethnoecology, with emphasis on how people use plants, the role of plants in traditional food systems, and the dynamics of human-plant-ecosystem interactions in a context of rapid social, ecological and climatic change. Lectures and discussion focus specifically on plant use in Alaska and other high latitude geographic and ecological settings, but ethnobotanical research in mid latitude and tropical settings will be referenced where appropriate. Students will gain a basic understanding of plant biology and taxonomy; plants and ecosystem services; the use of native Alaska plants for food and medicines; the economics of innovative plant-based businesses; and the cultural and economic significance of plant use to other cultures worldwide. (No prerequisite).

**EBOT 210 - Ethical Wildcrafting (1 credit):** This course will provide a better understanding of the industry of wildcrafting; the gathering, harvesting, processing and, in some cases, marketing of nontimber forest products. Specific examples from Alaska will be used to illustrate all aspects of this course, from identification of native flora, to a conceptualization of the unique market niche that Alaskan natural products fill, to native plant propagation and finally, to effects of invasive plants on wildcrafting. (No prerequisite).

**EBOT 220 - Research Methods in Ethnobotany (2 credits):** Research Methods includes an overview of the study of the relationships between people and plants and is designed to prepare students for field study with a comprehensive overview of research methods. The course will cover structured and non-structured interviews, plant collection, participant observation, and data analysis. It will also highlight ethical issues in ethnobotany related to intellectual property rights, benefit sharing and conservation of medicinal plants. Students will conduct their own research project in order to gain practical mastery of the course topics. The course aims to engage students in the possibilities of a young discipline, challenging pioneers of the study to make their mark and become the future of ethnobotany. (Prerequisite - EBOT 100)
EBOT 230 - Ethnobotanical Chemistry (3 credits): This course will provide the student with a basic understanding of chemical structure and function of medicinally active plant compounds. With this knowledge the student will be able to discern how and why plants produce primary and secondary compounds, learn how humans have made use of these compounds, and be introduced to methods used to isolate and deliver plant-derived compounds. Case studies will be used to illustrate how drugs are derived from plants, and the ethics of bioprospecting will be discussed. Class time will also be devoted to studying medicinal flora of Alaska from a chemical perspective. (Prerequisite - EBOT 100, Recommended - CHEM 103X)

5. Requirements for the certificate:

To receive an Ethnobotany Certificate, students must attain 30-32 credits of lower division (100-200 level) courses. The requirements include 9-10 credits of general university requirements (communications, computations, and human relations), a four credit entry level Biology course, a four credit entry level Chemistry course, 10 credits of required Ethnobotany courses, and 6-8 credits of advisor-approved elective courses.

a. Sample course of study:

<table>
<thead>
<tr>
<th>Course</th>
<th>Summer 09</th>
<th>Fall 09</th>
<th>Spring 10</th>
<th>Fall 10</th>
<th>Spring 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBOT 100</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEVM 105 or</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 103X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EBOT 210</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 103X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EBOT 200</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EBOT 220</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EBOT 230</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 103X or</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>BIOL 104X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>BIOL 135</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
Three year cycle of course offerings:

<table>
<thead>
<tr>
<th>Course</th>
<th>Fall 09</th>
<th>Spring 10</th>
<th>Summer 10</th>
<th>Fall 10</th>
<th>Spring 11</th>
<th>Summer 11</th>
<th>Fall 11</th>
<th>Spring 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 103X or</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>BIO 104X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 103X or</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 105X**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EBOT 100</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EBOT 200</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EBOT 210</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EBOT 220</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EBOT 230</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG 111X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 107X*</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>or DEVM 105</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 103X</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Prerequisite for CHEM 105X

**Prerequisite for BIO 116X

b. Proposed general catalog layout

**Ethnobotany Certificate**
College of Rural and Community Development
Kuskokwim Campus
(800) 478-5822
www.bethel.uaf.edu

**Ethnobotany Certificate:**

An Ethnobotany (EBOT) Program Certificate represents the completion of 33-36 credits in the interdisciplinary study of the role of native plants in indigenous cultures. Students will gain an understanding of native plants, their uses and ecology, in the context of their cultural, social, and economic importance by combining scientific and anthropological concepts and methods in tandem. The certificate emphasizes culturally relevant, place-based course offerings that highlight the ways that this information contributes to other fields of study, such as cultural and natural resource management, community development, adaptive resilience, and human health. It is also designed to serve as a bridge to a variety of natural science and liberal arts associate and baccalaureate programs.
Admission is open to all individuals, especially those employed by or interested in employment with state, federal, or tribal agencies or other local entities in rural Alaska which provide natural resources management services.

Students should have a high school diploma or GED and an interest in science-related fields. It is strongly recommended that students seeking admission to this program have completed two high school, lab-based science courses preferably in biology, chemistry, or physics.

Students whose ACT/SAT scores are not high enough to place them into regular college level classes will be required to take the ASSET, COMPASS, or Accuplacer test and will be placed into the appropriate developmental level course.

To remain in good standing, students must:
   a) Maintain an overall 2.0 grade point average
   b) Maintain a C grade or better in all required courses

Ethnobotany Certificate Program

1. Complete general university requirements (page 86)
2. Complete the following certificate requirements.................................9-10 credits total
   a. Communication..............................................................3 credits
      ENG 111X or ABUS 170
   b. Computation .................................................................3-4 credits
      DEVM 105 or MATH 103X or Math 107X (4 credits)
   c. Human Relations ............................................................3 credits
      ANTH/SOC 100X or ABUS 154
3. Complete the following program requirements.................................21-22 credits total
   Natural Science Core Courses (8 credits total)
   BIOL 103X (4 credits) - Biology and Society
   or
   BIOL 104X (4 credits) - Natural History of Alaska
   or
   BIOL 116X (4 credits) - Fundamentals of Biology II*
   CHEM 103X (4 credits) - General Chemistry
   Ethnobotany Core Courses (10 credits total)
   EBOT 100 (3 credits) - Introduction to Ethnobotany
   EBOT 200 (1 credit) - Seminar in Ethnobotany
   EBOT 210 (1 credit) - Ethical Wildcrafting
   EBOT 220 (2 credits) - Research Methods in Ethnobotany
   EBOT 230 (3 credits) - Ethnobotanical Chemistry
Electives (advisor-approved 100 or 200 level course) from the following subject areas (3-4 credits total):
ANL, Alaska Native Languages
APAR, Applied Art
ANTH, Anthropology
ECON, Economics
ED, Education
ENGL 212, or ENGL 213X
ESK, Eskimo
BIOL, Biology
NRM, Natural Resource Management

Minimum Credits Required.................................................................30-32 credits total

*Course requires additional prerequisites

B. Program goals

1. Brief identification of objectives and subsequent means for their evaluation
The EBOT Program will provide students with an alternate entry into academic study at UAF by offering regionally-relevant quality instruction. This preparation will increase the student’s employment opportunities in entry-level natural and cultural management positions, as well as provide a pathway to pursuit of associate and baccalaureate degrees.

a) Objectives of the EBOT Program:

- To provide students, in their home communities, with an attractive, culturally relevant curriculum and an intermediate step in entering the associate and baccalaureate academic pathway in the sciences.

- To provide quality interdisciplinary academic instruction in the areas of biology, botany, ecology, anthropology, and chemistry so that students may gain the skill sets needed to become active stewards in natural and cultural resource management in their communities.

- To provide culturally relevant research opportunities for KuC students and faculty in the life sciences. Partnerships developed will include organizations such as UAFs Institute of Arctic Biology, US Fish and Wildlife Service, Alaska State Fish and Game, NIMA Corporation, Hawaii community colleges, the Pacific Alliance, Alaska Native Science and Engineering Program, etc.

- To provide training that can be used as a stepping stone to higher-level positions for an underemployed rural workforce.

- To promote awareness of the scientific significance and economic potential of Alaska’s native flora and model efforts supporting the development of regional economic ethnobotany initiatives and knowledge-based economies in the Yukon-Kuskokwim Delta.
Having met these objectives, students will have achieved a tangible, initial academic milestone (a certificate). Some students will be motivated to reach other academic milestones such as the associate of science degree or to further their undergraduate or graduate education at UAF or other universities or institutions. Other students will be prepared to enter the workforce as entry-level ethnobotanists or technicians for both local and regional employers, such as the U.S. Fish and Wildlife Service, Alaska Department of Fish and Game, Bureau of Land Management, environmental firms, Native profit and non-profit entities with natural resource departments, or University researchers; ecotourism guides, or native plant-centric entrepreneurs.

b) Evaluation
KuC will conduct ongoing self-evaluation through student surveys of instruction, faculty-led, year-end interviews with all students enrolled in Ethnobotany, and EBOT Advisory Board annual assessments. Reports for quantitative evaluation will be based on actual enrollment figures taken from the UA Banner System. This formative evaluation will provide information to guide the implementation of recruitment, student services, field camps and academic course delivery. Academically, the UAF new course/program review process will provide critique and review in concert with faculty delivery of courses to guide the piloting, evaluation and redesign of all courses.

- Current student recruitment numbers will be tracked.
- Graduates will be tracked to assess their ability to gain employment and retain jobs.
- Graduates will be tracked to assess their matriculation into higher-level science-related associate or baccalaureate programs, and their subsequent academic performance.

The UAF Provost’s Student Learning Outcomes Assessment form for EBOT is included in Section IX - E, Assessment of the Program, and includes means for evaluating program objectives.

2. Relationship of program objectives to “Purposes of the University”
The University of Alaska Board of Regents approved UAF’s latest mission statement at its June 8, 2006 meeting in Kodiak.

“The University of Alaska Fairbanks, the nation’s northernmost Land, Sea and Space Grant university and international research center, advances and disseminates knowledge through teaching, research and public service with an emphasis on Alaska, the circumpolar North and their diverse peoples. UAF--America’s arctic university--promotes academic excellence, student success and lifelong learning.”
The EBOT program represents collaboration between rural community members, professional ethnobotanists, traditional native plant practitioners, University of Alaska faculty and staff, the Georgeson Botanical Gardens, the UA Museum, and the Alaska business community. Our EBOT Advisory Board (Appendix A) includes members from all areas listed above who are dedicated to providing culturally and regionally relevant academic instruction to students. This fertile collaboration is bolstered by the participation of many Elders (Appendix B) from the Y-K region who have shared and continue to share their traditional knowledge of plants with the instructors and students helping to develop the EBOT program.

This type of grass roots effort to create a community-driven program epitomizes the mission of CRCD, whose goal is to be an “engaged institution, positioned to respond to students and partners in developing the economic and social well-being of Alaska Native communities and beyond”. It also fits well with UAF’s stated purpose to promote student success, provide educational opportunities with an Alaskan emphasis, and facilitate community development for all state residents.

The EBOT program will provide educational opportunities for students throughout the state without requiring them to change or leave their culture or heritage. This will be accomplished by using a combination of traditional knowledge systems, standard instructional methods, and cutting edge distance delivery technology. The Kuskokwim Campus is committed to educating Alaska Native and rural residents, assisting them to affect social changes in their communities, thereby enriching the quality of their lives and cultures.

3. Occupational/other competencies to be achieved

The skills and competencies that students will learn are part of the overall education required to work effectively at an entry level in the fields of ethnobotany, biology, botany, and anthropology. As the demand throughout rural Alaska for regionally-relevant education increases EBOT certificate recipients will have achieved the training skills necessary for entry level employment in natural and cultural resource management, including: local/regional native corporation, Alaska Department of Natural Resources, and US Fish and Wildlife Service. With appropriate elective course selection, students will be equipped to work in their home communities as ecotourism guides, as professional wildcrafters, or as home business entrepreneurs of botanically-based products.

4. Relationship of courses to the program objectives:

Courses directly serve program objectives by:

- Providing for development of traditional skills within an academic setting.
- Providing culturally sensitive learning techniques and ethics.
• Using a delivery format designed to accommodate rural locations.

• Making extensive use of local, regional, and University-wide ethnobotanical expertise and resources.

• Creating a new avenue for rural Alaskans to enter into associate and baccalaureate degrees at the University level.

• Promoting understanding of the cultural, scientific, and economic importance of the native flora to Alaskan communities.

• Providing training to increase student success with entry level employment in local, regional, and tribal natural and cultural resource agencies and businesses.

III. PERSONNEL DIRECTLY INVOLVED WITH PROGRAM

A. List of faculty involved in the program

Kevin Jernigan, PhD, Assistant Professor Ethnobotany, KuC (USDA funded).
Dr. Jernigan will teach all core EBOT courses from KuC, using traditional classroom distance delivery methods and summer field courses ([http://www.bethel.uaf.edu/nsfw/ebot/ebot_front.html](http://www.bethel.uaf.edu/nsfw/ebot/ebot_front.html)). He will help to recruit and advise EBOT students and liaise with Biology and Anthropology faculty on the other UAF campuses to facilitate collaboration on future coursework and research.

Rose Meier, PhD, Assistant Professor of Biology, KuC (USDA funded).
Dr. Meier will coordinate the EBOT program, including organizing EBOT Advisory Board meetings and Weblog ([http://community.uaf.edu/~usda2/blog/](http://community.uaf.edu/~usda2/blog/)), working with Dr. Jernigan on future new course approvals, assisting in student recruitment and retention, helping to publish the Ethnobotany Manual in Yup’ik, facilitating the Hawaii/Alaska USDA grant-funded student exchange program, and assisting in program evaluation.

Julie Maier, PhD, Assistant Professor of Biology, I-AC (NSF funded).
Dr. Maier will teach distance-delivered Biology 100 and 200 level courses offered by CRCD required by EBOT students. As CRCD Natural Science division chair Dr. Maier also coordinates instruction of all EBOT and other CRCD science courses.
University Fairbanks and Rural Campus Faculty involved in teaching other courses required by EBOT

a) Carrie Aldrich, Assistant Professor, English, Interior-Aleutians Campus (I-AC), Fairbanks.

b) Judy Atkinson, Professor, Developmental Math, CRCD, Fairbanks.

c) Hector Douglas, Assistant Professor, Biology, KuC, Bethel.

d) Carol Lee Gho, Assistant Professor, Math, I-AC, Fairbanks.

e) Claudia Ihl, Assistant Professor, Biology, Northwest Campus, Nome.

f) Ronald Illingworth, Professor, English, I-AC, Fairbanks.

g) Martin Leonard, Assistant Professor, ITS, KuC, Bethel.

h) Todd Radenbaugh, Assistant Professor, RENW, Bristol Bay Campus (BBC), Dillingham.

i) Brian Rasley, Assistant Professor, CHEM, UAF and BBC

j) Sandra Wildfeuer, Assistant Professor, Mathematics, Interior-Aleutians Campus, Fairbanks.

B. Administrative and coordinating personnel

Resumes for key personnel attached as Appendix C.

1. Mary Pete, Director, Kuskokwim Campus, College of Rural and Community Development.

2. Rose Meier, PhD, Program Development Specialist, Kuskokwim Campus, College of Rural and Community Development.

3. Kevin Jernigan, PhD, Assistant Professor, Kuskokwim 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 AN/NH Higher Education Grant, Drumbeats: We Will Live Well, until 2010.

2. Staff support from the Kuskokwim Campus is available to the program as needed.
IV. ENROLLMENT INFORMATION

A. Projected enrollment

The EBOT Program has been designed to provide students with culturally relevant coursework that has not been previously available. We are encouraged that in the EBOT courses that have been successfully piloted (taught under ANTH and EBOT designators) student response has been very positive. The fact that EBOT courses build on extant community knowledge and life skills means that the program’s foundation is comprised of information that will help to address the unique cultural and economic conditions within rural Alaska. Programs that do this well, Tribal Management, Construction Trades, and Rural Human Services, for example, have been shown to be successful at attracting and retaining students here at UAF.

Ongoing efforts to bolster pre-college science in the Y-K region of Alaska (see http://www.bethel.uaf.edu/nsfw/ansep.html) are preparing the way for enrollment in the EBOT program. As a result of an expressed community need KuC has obtained the funding from the National Science Foundation Tribal College University Program (NSF_TCUP) to increase the academic offerings in, and recruitment of more students into, the science, technology, engineering, and math (STEM) fields. Formal efforts like the Emerging Scholars Program (KuC’s first-generation college student recruiting and retention program), the NSF-TCUP STEM Bridging program, and the summer Talent Search (federal DOE TRIO grant) program geared toward junior high and high school students in the KuC service area; underscore the importance that has been placed on improving STEM education in the Y-K region. The EBOT program dovetails perfectly into the goals of that grant. Furthermore, KuC’s curriculum development efforts for this certificate program integrate with the Ethnobotany Specialization for the Associate of Science (AS) Degree.

In another effort to engage more students in the sciences, KuC has specially-designed math and science courses that last an entire academic year, rather than just a college semester. In offering semester-long dual credit courses, KuC STEM faculty found that most high school students who were fully-engaged in both academic and extracurricular activities (in advanced placement classes and very active in sports and academic groups that required travel) were better able to successfully complete their coursework with the extended timeframe for instruction.

Given that this type of science training groundwork has been and will continue to be taking place in the Y-K region, the EBOT program is in a good position to begin enrolling students by Fall 2009. With a minimum of eight students per year, this program could be serving 24 students by 2011.

B. How determined/who surveyed/how surveyed

The proposed certificate in ethnobotany is being developed to address several interests. Statewide statistics on higher education attainment for Alaskans are
troubling. Only 28% of 9th graders in the state of Alaska enroll in college four years later. Only 18% are still enrolled in their sophomore year and only 6% graduate from college within six years (Source: NCES: Common Core Data, IPEDS Residency and Migration, Fall Enrollment, and graduation rate surveys, 2004).

The educational needs in rural Alaska are particularly acute. High school graduation rates in the Y-K region are the lowest in the state. The results of a needs assessment conducted by KuC in the Y-K region noted that many students show neither an aptitude for nor interest in STEM fields. Improving these statistics will involve effort on many fronts and one is developing programs that can engage students’ interest before they get to college, encouraging them to stay in school, enroll in college, obtain useful and marketable skills, and perhaps continue towards a four-year degree. Ethnobotany is a program that can positively affect student engagement and perseverance in all age groups.

Regional needs assessments were conducted in rural Alaska as a part of the USDA AN/NH Higher Education grant funding objectives. Results from these highlighted the desire for increased numbers and types of science classes and greater access to science based degrees at the rural campuses. The decision to address this desire to increase science based degrees at KuC by creating a Certificate in Ethnobotany, was arrived at by consensus of KuC faculty, CRCD rural campuses, and an ad hoc advisory group of concerned Y-K stakeholders.

In surveys sent to 220 rural Alaska high schools during the summer and fall 2005, students, teachers, counselors and principals voiced a strong interest in science degrees and careers.

As regular partners with KuC, local agencies and organizations often compile groups of employees or prospective employees to request closed-cohort classes or certificate and degree programs from KuC faculty. Increasingly, school districts are requesting “tech-prep” and dual-credit classes, particularly for pre-college or college level math and science.

As mentioned previously, formal and informal surveys of rural students conducted in the Y-K region determined a strong need for increased STEM classes. KuC has been obtaining resources from NSF-TCUP, USDA, DOE, and Alaska Native Engineering and Science Program (ANSEP) to create and run programs that will address these expressed needs of its students. The creation of the EBOT certificate is timely in view of the fact that, through the help of these programs, KuC has already been providing the ramped-up training to help students take the next step in their science education.

Finally, the Ethnobotany Certificate is a logical academic option for Y-K communities. KuC sits at the edge of the nation’s largest national wildlife refuge (Y-K Delta NWR). The abundance of natural resources available to the inhabitants of this region is underscored by the high subsistence harvest activity that occurs there. Because subsistence resource management is critical to Y-K residents, and projects that can affect this important lifestyle are of great interest to rural
community members, ethnobotany is a natural choice for a certificate program. The study of plants and their uses (ethnobotany) within this area has immediate appeal to rural Alaskans because of where and how they live.

C. Minimum enrollments to maintain program for 1,2,3,4, and 5 years
The minimum enrollment to maintain the program is eight students per year.

D. Maximum enrollment which program can accommodate:
The maximum enrollment in the program is 20 students per year. As more faculty resources become available more students will be admitted. It is our plan that within 2 to 3 years additional adjuncts will be identified and will contribute to the teaching capacity of the program. This model has worked well for successful rural-based programs such as Tribal Management, Construction Trades Technology, Rural Human Services and Educator Paraprofessional Programs at our sister campus, I-AC.

E. Special restrictions on enrollment
None

V. NEED FOR PROGRAM

A. Required for other programs
While this is a relatively new field of academic study, the EBOT certificate program is not yet a requirement for other programs. It is, however, designed to provide a new avenue into a variety of existing associate and baccalaureate degree programs, including biology, anthropology, botany, and natural resource management. This training will also provide students with the opportunity of developing the necessary credentials required to gain entry-level employment in local agencies and businesses of the type previously mentioned that were requesting closed-cohort classes from KuC.

During the course of developing this program we have sought the support and guidance of all stakeholders (Alaska Native elders, UAF science faculty, UAF administrators, students, community members, colleagues in other colleges with existing ethnobotany programs, and professional ethnobotanists) who might have an interest in its success and future progress. As a result of these discussions we’ve gained a new perspective regarding the potential for expansion of this certificate beyond the A.S. level. It is not too far-reaching to envision that the coursework developed for this certificate will become the backbone of the new ethnobotany specialization major at the B.S. level sometime in the near future. We have been strongly encouraged to look forward with this program and have endeavored to
create a certificate that is robust enough to support future expansion up the degree ladder. Indeed, we were told by students and faculty advisors that they were unable to take our pilot EBOT courses at the 100 or 200 level, but they would have enrolled if they were offered at a 300 or 400 level.

Through these numerous face-to-face meetings we’ve conducted with individuals we’ve received enthusiastic confirmation that the EBOT program is a much-needed addition to UAFs certificate offerings. Meeting results also indicated that the EBOT program’s ability to provide new science-based courses that both urban and rural students may take in their home communities will be greatly welcomed.

B. Employment market needs:

In a September 7, 2008 Community Perspective article in the *Fairbanks Daily News Miner* UA President Mark Hamilton outlined the brain drain that is occurring in Alaska when many of its high school graduates choose out-of-state colleges. In it he states:

“Our state must make this issue a top priority. The nation’s secretary of labor predicts two-thirds of all new jobs in the next 10 years will require some level of training and education beyond high school, or considerable on-the-job training. Talk to employers. They’re hard-pressed to find qualified people to hire from within our state.

People with higher skills are better off. They earn more money, contribute more to their communities, support commerce and the arts and give more generously to churches and nonprofits.”

There is a well-documented need for skills-based education in rural Alaska, and CRCD is ramping up to be able to provide more of the necessary training to its rural community members, as evidenced by the large increase in certificates and personnel that have been added to their ranks in the past several years. Two of these recently-approved certificates, Veterinary Technology Science and High Latitude Range Management, serve as models for community-driven program development.

When EBOT program coordinator, Dr. Meier, met with Dr. Will McClatchey at University of Hawaii-Manoa in February 2006 she was able to learn firsthand what a well-established ethnobotany program provides to their students. In addition to quality academic instruction they also work closely with stakeholders within and beyond Hawaii to provide the opportunities for employment for their Ethnobotany graduates as listed below ([http://www.botany.hawaii.edu/ethnobotany/default.htm](http://www.botany.hawaii.edu/ethnobotany/default.htm)):

1. Work in areas related to the conservation of biological and cultural diversity:
   - Cultural resource management (major land holders managing biological resources for cultural and community purposes).
   - Cultural/biological interpretation (Parks Service, Tourism, Museums, Fish & Wildlife, Department of Land & Natural Resources, Non-government Conservation Organizations, etc.).
   - Consultancy for cultural and environmental impact studies.

2. Work in natural health care businesses and practices:
   - Development of new botanical products for industry and community ventures.
• Laboratory and field research for pharmaceutical and herbal product companies.
• Non-industrial consultancy for biotechnology work related to traditional medicinal practices.

3. Enter graduate school programs in Ethnobotany, Botany, Anthropology, and related fields.

4. Enter advanced medical training programs
• Schools of Allopathic Medicine, Pharmacy, and Nursing.
• Schools of Naturopathic Medicine, Acupuncture, and Herbalism.”

An outstanding example of how these types of ethnobotanical opportunities have already begun to be realized in Alaska is Arxotica (http://www.arxotica.com/), the winner of the top award ($60,000) at the Alaska Federation of Natives (AFN) 2007 Alaska Marketplace competition (http://www.alaskamarketplace.org/50.cfm). This company, created and run by the Sparck triplets (three Alaska Native women from the Y-K Delta region), produces “a range of designer skin-care products of which key ingredients are those traditionally hand gathered from the wilderness that characterizes much of the 42 million acres of the Yukon/ Kuskokwim Delta”.

Another successful Alaska Native-run ethnobotanical business is Yup’ik Way, created and operated by Gloria Simeon (EBOT Advisory Board member), also from the Y-K region of Alaska. While the considerable potential of this type of entrepreneurial endeavor is evident, it is important to note that these women were forced to go outside of the state to obtain the expertise needed to realize these accomplishments because we they were unable to find it here. We will begin to rectify that situation with the EBOT program.

In addition to these, McClatchey, et al (An Evaluation of Educational Trends in Economic and Ethnobotany February 1999 in CIEER - Centre for International Ethnomedicinal Education and Research), list primary school teacher as an important position for trained ethnobotanists because they can influence young students about the importance of native plants to their communities.

While the EBOT program will provide much-needed science foundation to rural students, it is important to note that rural Alaskan villages have a very different economic profile than urban Alaska. Current trends show that as employment in the larger “hub” villages expands, smaller villages continue to have limited employment opportunities. Thus, while employment and industry needs are important to the continued success of the EBOT program, wage employment cannot be the only criterion used to justify the program. Ethnobotany fits well with the rural Alaskan and Alaska Native lifestyle and is already an integral part of many rural people’s life-skills. The desire to expand and formalize these skills for personal and community betterment will also contribute to the demand for this program.

The EBOT certificate articulates directly with the proposed Associate of Science degree and can eventually lead to a Bachelor of Science, Masters or Doctorate degree if the upper level math and science courses are taken. The EBOT certificate requirements will fulfill 18 (CHECK) of the proposed general Associate of Science degree requirements.
VI. OTHER

EBOT Native Alaska/Hawaii Native Student Exchange Project

As we began formulating the EBOT program we were encouraged to become familiar with what our colleagues in the Hawaiian Native serving colleges had accomplished during their decade long tenure of USDA AN/NH consortium funding. Our collaboration was strengthened when Dr. Meier visited Dr. Inge White of Windward Community College and Priscilla Millen of Leeward Community College at their home institutions in February 2006. During this time Dr. Meier toured their lecture, lab, and greenhouse facilities and learned about their programs. Dr. White has created and manages the Plant Biotechnology Certificate at Windward Community College (http://windward.hawaii.edu/Academics/ASC_Plant_Biotechnology.html) and Ms. Millen has assembled an impressive Hawaiian native plant garden on the Leeward CC campus, assembled funding for and had built an outdoor lab for her botany classes, and has created an online database of native Hawaiian plants that links up landscapers and horticulturists with producers (www.nativeplants.hawaii.edu), active September 2008.

During this visit we also discussed the possibility of piloting a native student exchange program between our institutions and states. This groundwork made possible the first ever Alaska Native/Native Hawaiian student exchange between the UAF and the Hawaii Community College systems, an effort that is currently being supported by USDA funds from both institutions. Our first Alaska Native exchange student inaugurated this exchange program when she flew to the island of Oahu in January 2008. Gloria Simeon spent Spring Semester 2008 at Windward Community College and in May 2008 successfully completed 14 credits towards her EBOT Certificate. Because of Dr. White’s strong commitment to the UAF EBOT program, she volunteered much of her time and energy to act as Gloria’s instructor and faculty advisor. In addition, the Hawaiian consortium believed strongly enough in this fledgling effort that they provided much-needed financial support to ensure that Gloria’s semester would be successful. She was, indeed, successful (13 credits with GPA 3.61) and Gloria’s completed independent project, *Bioassay and vitamin analysis of sweet potato leaves and potential uses in bioproducts*, was presented to the USDA AN/NH meeting that was held June 2008 in Bethel. Gloria is continuing with the EBOT coursework this fall.

This summer we also welcomed our first Native Hawaiian exchange student, Ikaika Dillinier, to the inaugural Introduction to EBOT field course (taught as EBOT 195), taught at Quinhagak AK in July 2008. Ikaika did very well in this course and greatly enjoyed his time in Alaska. He is currently pursuing a Plant Biotechnology Certificate at Windward Community College.

We have benefited greatly from our Hawaiian colleagues’ collective wisdom regarding their own well-established programs and together we have formed a strong foundation that will enhance our success here in Alaska. The potential of this program is only beginning to be realized, but we foresee great opportunities...
for interstate collaboration on course instruction, research projects, cultural exchange, and marketing efforts. Students, faculty, and community stakeholders from both states have much to teach each other and much that can be learned. Despite the environmental differences, there are many similarities between Alaska Native and Native Hawaiian cultures.

VII. RESOURCE IMPACT

A. Budget:

Funding for development and faculty salary for the EBOT certificate have been provided by the United States Department of Agriculture’s (USDA) Alaska Native/Native Hawaiian Serving Institutions (AN/NH) Higher Education program, whose mandate is to increase the presence of Alaska Natives and Native Hawaiians in USDA careers. Ethnobotany represents an excellent tie-in for USDA because the practice of using plants as food, medicinals, and fuel is deeply rooted in Alaska Native culture as well as the study and practice of agriculture.

Current USDA funding for the program extends to 2011, and also includes coverage of expenses for 20 students to complete the EBOT certificate program. Much of the cost of student support is allocated to student travel, as EBOT 100 (Introduction to EBOT) is designed to be taught in a natural field setting. Because the success of the EBOT program is of such high priority to KuC, many of the full time faculty and staff will also be contributing part of their time (total of 55% FTE faculty, 60% FTE support staff) to instruction and student support. KuC also has available for use by the EBOT program 3879 SF of instruction, office and lab space, as well as $52,810 in-kind contribution of networking hardware and software.

The EBOT program will be available to University campuses throughout the state and could generate between at least $9,600 if the minimum of 8 students take an average of 10 credits ($120/credit) per year. We anticipate that as student participation increases these fees will be covered by sources other than grant funding, including village and regional Native corporations. These partnerships have sustained many successful rural programs at UAF (Rural Human Services, Tribal Management, and Construction Trades, for example) and will do the same for the EBOT program.

Details for the budget are found in the Resource Commitment Form in Appendix D.

B. Facilities/space needs

Office and classroom space will be provided by existing University urban and rural campuses and regional nonprofit training centers throughout Alaska.
C. Credit hour production:
The program will provide an increase in credit hours for the University and will draw new students from an untapped pool by providing culturally relevant and skills-based education. The EBOT program will potentially generate 40 credit hours per semester, based on projected 8 students enrolled in an average of 5 credits of coursework each.

D. Faculty:
The primary faculty required for running the EBOT program are being supported by a USDA AN/NH grant, and they include a program coordinator, Dr. Rose Meier, and a professionally trained ethnobotanist, Dr. Kevin Jernigan.
In addition various additional adjunct faculty will be hired for EBOT courses as the need arises. In May and September 2008 the program secured the services of several adjunct faculty to facilitate the EBOT Elder Council meetings. Elders in Residence are also involved in co-teaching of all EBOT courses.

E. Library/Media materials, equipment and services:
The impact on library resources will be limited to Internet based resources with information transmission and book mailing done by staff at Center for Distance Education and at KuC. We have apprised Karen Jensen, Collection Development Officer of Rasmuson Library, of the EBOT program and provided her with the EBOT Format 3 for her review. On 24 September 2008, Karen Jensen was forwarded the Format 3 for the Ethnobotany Program and stated that she is “satisfied that the library system can provide adequate resources for all EBOT courses”.

VIII. RELATION OF PROGRAM TO OTHER UNIVERSITY PROGRAMS

A. Effects of enrollments elsewhere in the system:
The EBOT certificate program provides a new avenue for rural students to enter other university programs and has the potential to create a positive impact on enrollment of rural students on campus. Dr. Meier, EBOT program coordinator, has spent Fall 2007 meeting with existing faculty of potentially affected programs (Biology, Chemistry, Anthropology, UA Museum, and Georgeson Botanical Gardens) and informing them that more rural students may be enrolling in their courses in the near future. All responded positively to this prospect, as rural and Alaska Native students are underrepresented in these departments on campus.
In addition, Dr. Meier and Dr. Julie Maier, CRCD Natural Science Division Chair, met with the (then) Dean Joan Braddock in late Fall 2007 to update her on the EBOT program and the potential impact that this program may have on student enrollment in courses within the College of Natural Science and Mathematics. Dr. Meier also met Matt Carlson of the Alaska Natural Heritage Program and Dr. Trish
Wurtz of the US Forest Service on 15 November to inform them of this new program and inquire about potential collaboration with students and faculty in the future.

B. Does it duplicate/approximate programs anywhere in the system:

There is no duplication or approximation of other programs. At present there is no program at any level, from certificate to post graduate that delivers a certification in ethnobotany anywhere in the system. The EBOT courses developed for this program are the first to be formally and regularly offered anywhere in the state.

C. How does the program relate to research and service activities:

1. Contributions to research or service

As previously stated, one of our goals with the EBOT program is to provide culturally relevant research opportunities for KuC students and faculty in the life sciences. Successful completion of the EBOT program requirements will facilitate active development of and participation in research projects by rural and Native Alaskan students. The KuC ethnobotany faculty member, Dr. Jernigan, has already met with potential collaborators on the KuC and UAF main campuses and is beginning to develop partnerships with researchers and other stakeholders working in the Y-K region on current and future projects. Students will be included in these research efforts apace, as they progress through the EBOT program. This model of research collaboration can extend to other rural campuses in the state that have also incorporated science instruction into their curriculum.

The EBOT program will also promote awareness of the scientific significance and economic potential of Alaska’s native flora and model efforts supporting the development of regional economic ethnobotany initiatives and knowledge-based economies in the Yukon-Kuskokwim Delta. We already have two successful models for this service based activity in the Y-K Delta region, Arxotica and Yup’ik Way. The presence of such homegrown business endeavors in the Y-K region can serve not only as employers, but also as role models for future ethnobotany graduates. Both represent companies based on development, packaging, and marketing of ethnobotanical products harvested from the Y-K Delta region, and were discussed in more detail earlier in the “Employment market needs” section of this proposal.

By keeping tabs on student progress, the EBOT program will be providing much-needed data regarding efficacy of distance delivery of courses and community response to regionally-tailored University programs.

2. Benefits from research or service activities

The EBOT program is part of a comprehensive plan to make an academic education more relevant throughout the state and, especially, in rural communities. This program will provide additional educational opportunities so that local people can
gain the credentials they need to assume leadership positions in their communities and begin to reduce the high cost of importing expertise and services.

If they choose to continue academic pursuits, EBOT certificate recipients will also find ample opportunities working in research being conducted in rural Alaska. In discussions with researchers around the state we’ve learned that University and agency researchers are very eager to find rural collaborators for their projects but most often cannot find suitable applicants with the right training to hire.

The presence of two successful ethnobotanically-based businesses in an economically disadvantaged area such as the Y-K Delta region represents additional jobs and revenue for the community. In addition, these companies serve as role models for future entrepreneurs looking for options for employment in their home communities. As students become more familiar with the uses of the local flora and begin to apply creative new marketing strategies involving the internet, we anticipate additional ventures like Arxotica and Yup’ik Way to emerge in rural Alaska.

IX. IMPLEMENTATION/TERMINATION

A. Date of implementation

The program is expected to be in the University of Alaska Fairbanks catalog and available in the fall semester of 2009. Several of the courses have already been piloted in Fall 2007, and Summer 2008. One EBOT course, Ethical Wildcrafting (EBOT 210) is being taught this semester, Fall 2008.

B. Plans for recruiting students:

This program has already begun to be marketed. Professionally-produced logos and flyers were created in Fall 2007, and Summer 2008, respectively (see Appendix E for logo and flyer example). The logos have been used on all correspondence, course, and seminar notices; and advertisements for the program were published in regional newspapers statewide in August and September 2008. Students have been successfully recruited to enroll in courses by utilizing the Y-K region’s First Class email system, posting of flyers in local businesses and on campuses, emails to school districts, regional education centers, and tribal offices across the state, local newspaper articles (http://www.thetundradrums.com/news/show/2055) and public service announcements on rural radio stations across the state. We will continue to utilize these avenues as well as expand on them by creating new inroads into increasing rural participation as EBOT students begin to progress through the program and become more visible to their communities.

C. Termination date:

This is an ongoing program with no termination date.
D. Plans for phasing out program if it proves 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, Ethnobotany program students will be provided the opportunity to complete the University requirements for the Certificate.

E. Assessment of the program:

KuC will conduct ongoing self-evaluation through student surveys of instruction, faculty-led, year-end interviews with all students enrolled in Ethnobotany, and annual Advisory Board assessments. Reports for quantitative evaluation will be based on actual enrollment figures taken from the UA Banner System. This formative evaluation will provide information to guide the implementation of recruitment, student services, field camps and academic course delivery.

We will also provide students with the opportunity to evaluate the program via the exit interview process. During this time of program completion students will be encouraged to provide feedback on standard, previously-crafted questions and spontaneous topics to an objective member of the Student Services staff. Students will also be re-tested using the same system employed before beginning the program, to provide another benchmark of student achievement. This quantitative measurement, combined with the qualitative exit interview and other assessment information, will provide a more balanced picture of student and program progress.

Student Outcomes Assessment Plan *(from the UAF Provost’s webpage:)*

[http://www.uaf.edu/provost/outcomes/StepByStep.html](http://www.uaf.edu/provost/outcomes/StepByStep.html)
### MISSION STATEMENT:
The ethnobotany certificate program will provide a culturally-relevant course of study focused on the uses of native flora of Alaska.

### GOAL STATEMENT:
To assure certificate recipients possess a strong academic foundation and are well prepared to continue on with further university studies or pursue entry-level positions in natural and/or cultural resource based positions.

<table>
<thead>
<tr>
<th>1) Students will achieve fundamental college-level competency in fields of ethnobotany, botany, biology, math, chemistry, and anthropology.</th>
<th>Entry level assessment: Students will take ASSET test to determine placement into courses.</th>
<th>Entry level: Based on testing results, Advisor will determine appropriate courses for student to enroll in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exit level assessment: Students will maintain a minimum grade of C on all required courses.</td>
<td>Exit level: Instructors will provide grades and written evaluations on students’ work. Students will work with Advisor throughout the program.</td>
<td>Exit level: Faculty assessment committee (CRCD science faculty) will annually review progress of all EBOT students and identify concerns to be addressed.</td>
</tr>
<tr>
<td>2) Students will gain cultural awareness of the importance of native flora to rural and Native Alaskans and will contribute to the documentation of traditional and modern uses of native flora of Alaska.</td>
<td>Entry level assessment: Student will have little or no experience at this point.</td>
<td>Entry level: Instructor will include appropriate information in course lectures and labs.</td>
</tr>
<tr>
<td>Exit level assessment:</td>
<td>Exit level:</td>
<td></td>
</tr>
<tr>
<td>3) Students will develop awareness of the scientific and economic potential of Alaska native flora.</td>
<td>Student will complete instructor-approved project documenting local uses of Alaska native flora for course grade. Appropriate participant permission will be obtained prior to data collection.</td>
<td>Instructor will evaluate project submission. Community members will be invited to participate in this process, and offered copies of completed projects for their own archives. Appropriate participant permission will be obtained prior to community presentation.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Entry level assessment: Student will have little or no experience at this point.</td>
<td>Entry level: Instructor will include appropriate information in course lectures and labs.</td>
<td></td>
</tr>
<tr>
<td>Exit level assessment: Students will be required to submit a research paper on either scientific or economic potential of Alaska native flora before graduating.</td>
<td>Exit level: Instructor will evaluate research paper and assign a grade. Findings from these papers will be shared with the relevant communities via posters, internet postings, and/or student talks, as deemed appropriate.</td>
<td></td>
</tr>
<tr>
<td>Exit level assessment: Student perception of program</td>
<td>Exit level: Exit interview with Student Services staff</td>
<td></td>
</tr>
<tr>
<td>4) Evaluation of EBOT program success will be done based on student work, course evaluations, and faculty input.</td>
<td>Entry level assessment:</td>
<td>Exit level: EBOT Advisory Board members will convene annually to evaluate student work, identify program areas needing improvement, and craft action items to address these shortcomings.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>5) Assessment reports for the program are regularly collected and maintained.</td>
<td>Entry level assessment:</td>
<td>Exit level: Assessment reports from CRCD Science faculty and EBOT Advisory Board will be posted onto the CRCD/USDA Data repository website.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Exit level: Student will re-take original placement tests to determine benchmarks of progress.</td>
</tr>
</tbody>
</table>
X. REGENTS GUIDELINES:

University of Alaska Board of Regents
Program Approval Summary Form

MAU: UAF (CRCD, KuC)
Title: Certificate in Ethnobotany (EBOT)
Target admission date: Fall 2009

How does the program relate to the Education mission of the University of Alaska and the MAU?

This program will encourage rural students to continue their formal academic education beyond high school and to pursue science based studies, an area where few Alaska Natives are currently enrolled. Because native plant use is already an integral part of many rural peoples’ life-skills, ethnobotany is an area of high interest to rural students and is one that has immediate applicability. The EBOT program will provide a new learning path for rural, primarily Alaska Native, students to become interested in science as it applies to their lives. The program will also encourage students who wish to pursue undergraduate work in a variety of fields, including: botany, biology, anthropology, business, or education.

The EBOT program represents collaboration between rural community members, professional ethnobotanists, traditional native plant practitioners, University faculty, the Georgeson Botanical Gardens, the UA Museum, and the Alaska business community. Our EBOT Advisory Board (see Appendix A) includes members from all areas listed above who are dedicated to providing culturally and regionally relevant academic instruction to students. This fertile collaboration is bolstered by the participation of many Elders (see Appendix B) from the Y-K region who have shared and continue to share their traditional knowledge of plants with the instructors and students helping to develop the EBOT program.

This type of grass roots effort to create a community-driven program epitomizes the mission of CRCD, whose goal is to be an “engaged institution, positioned to respond to students and partners in developing the economic and social well-being of Alaska Native communities and beyond”. It also fits well with UAF’s stated purpose to promote student success, provide educational opportunities with an Alaskan emphasis, and facilitate community development for all state residents.

While this is a relatively new field of academic study, the EBOT certificate program is not yet a requirement for other programs. It is, however, designed to provide a new avenue into a variety of existing associate and baccalaureate degree programs, including biology, anthropology, botany, and natural resource management. This training will also provide students with the opportunity of developing the necessary credentials required to gain entry-level employment in local agencies and businesses of the type previously mentioned that were requesting closed-cohort classes from KuC.
The EBOT program will provide educational opportunities for students throughout the state without requiring them to change or leave their culture or heritage. This will be accomplished by using a combination of traditional knowledge systems, standard instructional methods, and cutting edge distance delivery technology. The Kuskokwim Campus is committed to educating Alaska Native and rural residents, assisting them to affect social changes in their communities, thereby enriching the quality of their lives and cultures. The EBOT program applies directly to UAF’s emphasis on knowledge related to “Alaska, the North, and their diverse peoples”.

What State Needs are met by this program.

There is a well-documented need for skills-based education in rural Alaska, and CRCD is ramping up to be able to provide more of the necessary training to its rural community members, as evidenced by the large increase in certificates and personnel that have been added to their ranks in the past several years. Two of these recently-approved certificates, Veterinary Technology Science and High Latitude Range Management, serve as models for community-driven program development.

Like most other states in the US, Alaska does not have an Ethnobotany program. The new EBOT program will represent a significant level of academic innovation by creating the first Certificate in Ethnobotany at the associate of science level available at any institution of higher learning in the state and, indeed, the nation.

Ethnobotany has applications in natural and cultural resource management, home and community business development, community health and well-being, education, and ecotourism. All of these areas are in dire need of educated employees working for local and tribal governments to deal with related issues. This program will provide additional educational opportunities so that local people can gain the credentials they need to assume leadership positions in their communities and begin to reduce the high cost of importing expertise and services.

Urban Alaska would be served by providing a source of regionally-relevant natural and cultural knowledge of the native flora of Alaska. This widely untapped natural resource is available to all Alaskans, both rural and urban.

What are the Student opportunities and outcomes? Enrollment projections?

The EBOT Program has been designed to provide students with culturally relevant coursework that has not been previously available. We are encouraged that in the EBOT courses that have been successfully piloted (taught under ANTH and EBOT designators) student response has been very positive. The fact that EBOT courses build on extant community knowledge and life skills means that we have begun with material that will help to address the unique cultural and economic conditions within
rural Alaska. Other programs that do this well, including Tribal Management, Construction Trades, and Rural Human Services, have been shown to be successful at attracting and retaining students here at UAF.

The skills and competencies that EBOT students will learn are part of the overall education required to work effectively at an entry level in the fields of ethnobotany, biology, botany, and anthropology. As the demand throughout rural Alaska for regionally-relevant education increases EBOT certificate recipients will have achieved the training skills necessary for entry level employment in natural and cultural resource management, including: local/regional native corporation, Alaska Department of Natural Resources, and US Fish and Wildlife Service. Other occupational opportunities for Ethnobotany Certificate recipients include entrepreneur and ecotourism guide.

An outstanding example of how ethnobotanical opportunities have already begun to be realized in Alaska is Arxotica (http://www.arxotica.com/), the winner of the top award ($60,000) at the Alaska Federation of Natives (AFN) 2007 Alaska Marketplace competition (http://www.alaskamarketplace.org/50.cfm). This company, created and run by the Sparck triplets (three Alaska Native women from the Y-K Delta region), produces “a range of designer skin-care products of which key ingredients are those traditionally hand gathered from the wilderness that characterizes much of the 42 million acres of the Yukon/ Kuskokwim Delta”. Another successful Alaska Native-run ethnobotanical business is Yup’ik Way, created and operated by Gloria Simeon (EBOT Advisory Board member), also from the Y-K region of Alaska. While the considerable potential of this type of entrepreneurial endeavor is evident, it is important to note that these companies were forced to go outside of Alaska to obtain the expertise needed to realize these accomplishments because we they were unable to find it here. We will begin to rectify that situation with the EBOT program.

In the past several years KuC has been laying the groundwork for the EBOT program by offering several programs that emphasize training in the fundamentals of science, technology, engineering and math (STEM) fields; including formal efforts like the Emerging Scholars Program (KuC’s first-generation college student recruiting and retention program), the NSF-TCUP STEM bridging program, and the summer Talent Search (federal DOE TRIO grant) program geared toward junior high and high school students. Given that this type of science training groundwork has been laid, the EBOT program is in an excellent position to take advantage of this situation and to begin enrolling students by Fall 2009. With a minimum of eight students per year, this program will be serving 24 students by 2011.

Describe Research opportunities:
The primary focus of the EBOT certificate is to provide students with a strong academic foundation in science. This type of background will open many doors for rural students in their own future academic endeavors because the program is designed to dovetail into the Associate and Bachelors of Science degrees.
Since one of the goals of the EBOT program is to provide culturally relevant research opportunities for KuC students and faculty in the life sciences, successful completion of the EBOT program requirements will facilitate active development of and participation in research projects by rural and Native Alaskan students and rural campus faculty. The KuC ethnobotany faculty member, Dr. Jernigan, has already met with potential collaborators on the KuC and UAF main campuses and is beginning to develop partnerships with researchers and other stakeholders working in the Y-K region on current and future projects. Students will be included in these research efforts as they progress through the EBOT program. This model of research collaboration can extend to other rural campuses in the state that have also incorporated science instruction into their curriculum.

The paucity of scientifically-trained rural students available to work with researchers on ongoing research projects in rural communities will begin to be addressed, as students become familiar with faculty and research methodology. With this increased awareness will come increased understanding and, it is hoped, an increase in the amount of rural/urban collaboration within the state.

By keeping tabs on student progress, the EBOT program will be providing much-needed data regarding efficacy of distance delivery of courses and community response to regionally-tailored University programs.

Describe Fiscal Plan for development and implementation:
Funding for development and faculty salary for the EBOT certificate have been provided by the United States Department of Agriculture’s (USDA) Alaska Native/Native Hawaiian Serving Institutions (AN/NH) Higher Education program, whose mandate is to increase the presence of Alaska Natives and Native Hawaiians in USDA careers. Ethnobotany represents an excellent tie-in for USDA because the practice of using plants as food, medicinals, and fuel is deeply rooted in Alaska Native culture as well as the study and practice of agriculture throughout the world.

Current USDA funding for the program extends to 2011, and also includes coverage of expenses for 20 students to complete the EBOT Certificate program. Much of the cost of student support is allocated to student travel, as EBOT 100 (Introduction to EBOT) is designed to be taught in a natural field setting. Because the success of the EBOT program is of such high priority to KuC, many of the full time faculty and staff there will also be contributing part of their time (total of 55% FTE faculty, 60% FTE support staff) to instruction and student support. KuC also has available for use by the EBOT program 3879 SF of instruction, office and lab space, as well as $52,810 in-kind contribution of networking hardware and software.

The EBOT program will be available to University campuses throughout the state and could generate between at least $9,600 if the minimum of 8 students take an average of 10 credits ($120/credit) per year. We anticipate that as student participation
increases these fees will be covered by sources other than grant funding, including village and regional Native corporations. These partnerships have sustained many successful rural programs at UAF (Rural Human Services, Tribal Management, and Construction Trades, for example) and have the potential to do the same for the EBOT program.
APPENDICES

Appendix A: Ethnobotany Advisory Board Members
Appendix B: Ethnobotany Elder Council Members
Appendix C: Resumes of Ethnobotany Personnel
Appendix D: Resource Commitment Form
Appendix E: Example of EBOT Recruitment Posters and Logo
Appendix F: Advisory Board Letter of Support
Appendix A - Ethnobotany Certificate Program Advisory Board

Ann Garibaldi

Craig Gerlach
PhD Anthropology
Dr. Gerlach’s recent work focuses on nutritional ecology, community health, and on the restoration of traditional food systems in interior northern Alaska. Piloted EBOT 200, Seminar in Ethnobotany, Fall 2007

Pat Holloway
PhD Horticulture
Dr. Holloway’s research involves the improvement of production of horticultural crops in Alaska, with emphasis on the propagation and cultivation of native plants for ornamental and fruit-crop production, and the reproductive biology of endangered plants. She manages the Georgeson Botanical Garden.

Stefanie Ickert-Bond
PhD Botany
Dr. Ickert-Bond is the curator of the Herbarium at the University of Alaska Museum. Her research interests include molecular systematics, phylogeny, biogeography and morphological
evolution in vascular plants.

Kevin Jernigan  
PhD Ethnobotany  
Dr. Jernigan joined the KuC faculty June 2008. He taught Introduction to EBOT, July 2008.

Betty Rogers  
High School Science instructor, St. Paul Island  
Recipient of first USDA funded ethnobotany mini-grant, June 2003  
(see http://www.uaf.edu/coop-ext/highered/ruralflash/pop.html for report)

Gloria Simeon  
Ethnobotanical entrepreneur and owner of Yup’ik Way, purveyor of Alaskan ethnobotanicals  
First student to enroll in the EBOT program and first Alaska Native participant in the Hawaii exchange program, Spring 2008

Charles Walsh  
Ethnobotanical entrepreneur and owner of Alaska Herb Tea Company,  
http://www.alaskaherbtea.com/  
Co-author of Foraging in Alaska for Fun and Profit, textbook used in EBOT 210, Ethical Wildcrafting  
http://www.alaskaherbtea.com/Foraging/foraging_and_wildcrafting.htm
See EBOT Advisory Board Blogsite, http://community.uaf.edu/~usda2/blog/, for previous and current updates to Board members.
Appendix B - Ethnobotany Elder Council - Meetings at KuC
May and September 2008

<table>
<thead>
<tr>
<th>Mary Active</th>
<th>Togiak</th>
<th>Ben Flynn</th>
<th>Chefornak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anna Alexie</td>
<td>Bethel</td>
<td>Elena Fox</td>
<td>Bethel</td>
</tr>
<tr>
<td>Cecelia Andrew</td>
<td>Chevak</td>
<td>Esther Green</td>
<td>Bethel</td>
</tr>
<tr>
<td>Evon Azean</td>
<td>Kongiganuk</td>
<td>Mary Gregory</td>
<td>Bethel</td>
</tr>
<tr>
<td>Annie Blue</td>
<td>Togiak</td>
<td>Pauline Hunt</td>
<td>Kotlik</td>
</tr>
<tr>
<td>Rita Blumenstein</td>
<td>Anchorage</td>
<td>Lena Long</td>
<td>St. Mary's</td>
</tr>
<tr>
<td>Julia Brown</td>
<td>Kongiganuk</td>
<td>Marie Myers</td>
<td>Pilot Station</td>
</tr>
<tr>
<td>Elsie Chimigalrea</td>
<td>Bethel</td>
<td>Modesta Myers</td>
<td>Pilot Station</td>
</tr>
<tr>
<td>Joseph David, Jr.</td>
<td>Mekoryuk</td>
<td>Tim Myers</td>
<td>Pilot Station</td>
</tr>
<tr>
<td>Margie David</td>
<td>Mekoryuk</td>
<td>Thecla Paul</td>
<td>Pilot Station</td>
</tr>
<tr>
<td>Rose Domnick</td>
<td>Bethel</td>
<td>Gloria Simeon</td>
<td>Bethel</td>
</tr>
<tr>
<td>Ruthann Elia</td>
<td>St. Mary's</td>
<td>Maryann Sundown</td>
<td>Scammon Bay</td>
</tr>
</tbody>
</table>

Facilitators:
- Oscar Alexie, KuC faculty, Yup'ik language
- Sophie Alexie, KuC faculty, Yup'ik language
- Rose Domnick, Translator/Scribe, Bethel AK
- Kevin Jernigan, KuC faculty, Ethnobotany (September)
- Rose Meier, EBOT Program Coordinator (May)
- Carolyn Parker, UA Museum botanist
- Carol Sanders, KuC staff

Ethnobotany Elders Council May 2008
Front: Tim Myers, Mary Active, Annie Blue, Anna Alexie, Lena Long
Middle: Julie Brown, Modesta Myers, Thecla Paul, Mary Gregory, Ruthann Elia, Pauline Hunt, Cecelia Andrews
Back: Oscar Alexie, Rose Meier, Sophie Alexie, Carolyn Parker
EBOT Elder Council, September 24-26 2008
KuC, Bethel AK

Back row, left to right: Rose Domnick (translator and scribe), Gloria Simeon, Rita Blumenstein, Evon Azean, Esther Green, Joseph David, Margie David, Timothy Myers, Thecla Paul

Seated, left to right: Elsie Chimigalrea, Mary Gregory, Elena Fox, Maryann Sundown, Marie Myers, Modesta Myers
APPENDIX C: Resumes of Ethnobotany Personnel

RESUME

MARY CIUNIQ PETE

Birth date: April 29, 1957
Birth place: Stebbins, Alaska, USA
Ethnicity and Language: Yup’ik Eskimo: speak and write Central Yup’ik Eskimo
Present Address: P.O. Box 2071
Bethel, AK 99559
(907) 465-4502 (work); (907) 543-3074 (home)

University Degrees: BA in Anthropology, University of Alaska, Fairbanks, 1979
MA in Anthropology, University of Alaska, Fairbanks, 1984

Work Experience and Description

2005- present Director, Kuskokwim Campus, UAF, College of Rural and Community Development.
Oversee physical plant, academic and community college mission of UAF satellite campus in Bethel, Alaska. Negotiate and approve academic workloads for 15 full-time faculty and 40 part-time and full-time staff; oversee a 38-bed residential dorm for full-time students, and a consortium library. KuC, a rural campus, offers academic and occupational certificates, associate degrees, and selected bachelors’ and Masters’ programs.

1996-2005 Director, Division of Subsistence, Alaska Department of Fish and Game
Oversee and direct statewide program mandated to conduct research on subsistence hunting, fishing and gathering in Alaska. Assist policy makers and fish and wildlife managers in applying research findings to implement the state’s subsistence priority law. Serve as legislative liaison for the division in budget development and analysis of proposed legislation.

1993-96 Instructor, Department of Rural Development, UAF, Kuskokwim Campus
Taught rural development courses; performed community service, research and other faculty duties. Secured research grants from two fisheries development cooperatives and functioned as primary project investigator, supervisor, and writer of research findings.

1984-93 Subsistence Resource Specialist, Division of Subsistence, ADF&G
Designed, sought approval and support for research projects from agencies and communities; collected and analyzed data and wrote reports on subsistence fish and game harvest and use patterns of communities in the Yukon-Kuskokwim delta region of Alaska. Provided information to state and federal agencies and the public; presented reports to advisory committees and Fisheries and Game management boards; managed operations of the Bethel office; and supervised seasonal and temporary staff.

1979-84 Research and Teaching Assistant, Department of Anthropology, UAF
As an upper-class and graduate student, collected socio-cultural information and helped with analysis and report writing. Major research projects explored the magnitude of and coping strategies toward problems associated with alcohol abuse and domestic violence in several Yup’ik Eskimo communities. Processed literature for lectures; developed and graded examinations for all levels of undergraduate college courses in socio-cultural anthropology.

1970-78 Relevant summer and part-time jobs

Participated in family-based subsistence hunting, fishing, and gathering. Crew member on family commercial fishing operations; reindeer herder for village-owned herd; interim manager for ANCSA village corporation; tester in psychological research project examining for effects of television on new audiences; live-in tutor-counselor/instructor in a college preparatory program for rural, primarily Alaska Native youth.

Publications


1983 Homes in Disruption: Spouse Abuse in Yup’ik Eskimo Society. Senate Advisory Committee.


Theses and unpublished professional reports

1996 Cross Cultural Communication Issues in Domestic Violence. Training presented to prosecution and paralegals at a conference sponsored by the Alaska Department of Law; The conference focused on successful prosecution of domestic violence cases. Girdwood, AK. October 17, 1996.


1987 (with Daniel Albrecht and Ronald Kreher) Subsistence Herring Fishing in the Nelson Island District and Northern Kuskokwim Bay. Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 160, Juneau, AK.

1986 (with Ronald Kreher) Subsistence Herring Fishing in the Nelson Island District. Alaska Department of Fish and Game, Division of Subsistence. Technical Paper No. 144, Juneau, AK.

1986 (with Dr. Robert Wolfe, et. al) The Role of Fish and Wildlife in the Economies of Barrow, Bethel, Dillingham, and Nome. Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 154, Juneau, AK.

1984 (with Dr. Robert Wolfe) Use of Caribou and Reindeer in the Andreafsky Mountains. Alaska Department of Fish and Game, Division of Subsistence. Technical Paper No. 98, Juneau, AK.

1984 Subsistence Use of Herring in the Nelson Island Region of Alaska. Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 113, Juneau, AK.


1983 (with Dr. Anne Shinkwin) Alaska Native Village Alcohol Programs: An Example of Directed Culture Change - Implications for Training. Requested evaluation of Yukon-Kuskokwim Health Corporation Village Alcohol Education Counselor Program.

Conference papers, panels, and addresses


2004 Sustaining the Bering Sea Ecosystem: A Community Driven Social Science Planning Process. Draft research plan for Arctic Social Science Program of the National Science Foundation presented at the American Association for the Advancement of Science Conference, Anchorage Session, September 29 - October 1, 2004.


1993 Cross-Cultural Communication Problems and Issues. Training presented to nurses, doctors, prosecutors, and investigators at a conference sponsored by the South Peninsula Hospital to establish a Sexual Assault Response Team. Homer, AK. October 18-20, 1993.
1993 The Importance Of Cross-Cultural Communication. Training co-presented with Dr. Phyllis Morrow at the statewide conference with the theme: Successful Investigation and Prosecution of Sexual Assault, Anchorage, AK. October 12-17, 1993.


Expert Witness

In progress: Murtagh v. State; serving as state’s expert in civil case challenging law governing treatment of domestic violence/sexual assault victims by defense attorneys and investigators.

1991 State v. Foster; served as expert for prosecution in child sexual abuse case.

1988 Affidavit filed in the case of Dan-Conlon and other similarly situated obligors (3AE-87-06505) on the role of adoption in Yup’ik Eskimo culture and society.

Selected Activities

2005 Member of organizing committee, with Drs. Ben Fitzhugh and Henry Huntington, to compile the Human Dimensions of the Bering Sea Ecosystems Study Plan for the Arctic Social Science Program of the National Science Foundation.

2004 Member of the Oversight Committee convened by NSF to review management and science program of the International Arctic Research Center (IARC).

2002 Grant proposal reviewer for North Pacific Research Board, Gulf Ecosystem Management, Arctic-Yukon-Kuskokwim-Sustainable Salmon Initiative, and Arctic Social Science programs

2002 Elected to board of directors of the Stebbins Native Corporation, for-profit village corporation established under the Alaska Native Claims Settlement Act.

1987-91 Appointed by Governor to Alaska Council on Domestic Violence and Sexual Assault


1985-87 Appointed by Governor to Alaska Women’s Commission.

1984-87 Served on the Board of Tundra Women’s Coalition, Bethel-based non-profit program serving victims of domestic violence and sexual assault.
OBJECTIVE
I am most productive and content when working in educational institutions that provide opportunities to utilize my years of experience in scientific research and teaching. I enjoy the exciting interactions that come about when working with staff, students, faculty and community.

EXPERIENCE

Ethnobotany Program Coordinator
Kuskokwim Campus (Bethel), Fairbanks AK (10/06 – present)
Shepherd the ethnobotany certificate program through University approval process. Work with faculty to develop/teach pilot ethnobotany courses via distance delivery. Co-write and submit grant proposals for future funding of ethnobotany program.

Research Professional
Georgeson Botanical Gardens, Fairbanks AK (9/03 – present)
Work with Director of the Gardens to develop, carry out and report on experiments using plant tissue culture techniques that seek improvements in propagation of Vaccinium species crop plants. Position is part time and term funded.

Administrative Assistant / Substitute Travel Coordinator
Institute of Arctic Biology Business Office, Fairbanks AK (1/03 – 7/03)
Responsible for all IAB travel while travel coordinator was out on maternity leave, research and create journal vouchers, distribute and track IAB keys, assist fiscal officer with correspondence, answer and forward phone calls, maintain logs, deal with all walk-ins during business hours.

Executive Assistant
Arctic Research Consortium of the United States (ARCUS), Fairbanks AK (5/02 – 11/02)
Assist Executive Director with correspondence, purchasing, meeting preparations.

Spatial Ecology Lab (SEL) Coordinator
University of AK Fairbanks, Fairbanks AK (07/97 – 7/02)
Supervise all activities in the SEL, including purchasing of necessary materials, create and maintain all electronic and hard copy files needed to run lab (including invoices, warranties, repair records, and vendor contact information; provide main point of contact for SEL with all users and vendors; interface with the Lab Director to monitor progress on SEL projects.

Spatial Analysis Lab Coordinator
Smithsonian Conservation and Research Center, Front Royal VA (08/95 - 02/97)
Supervised students and researchers using facility, conducted public tours, instructed training courses in geographic information systems, co-wrote proposals for research funding, purchased software/hardware upgrades,
maintained all software and hardware in lab, liaison with all relevant vendors/granting agencies/technical support personnel.

Grant Administrator
Conservation Technology Support Program, Front Royal VA (08/95 - 02/97)
Coordinated the review process, prepared all correspondence with public, program participants and sponsors; designed and supervised two-week training course in geographic information systems, interfaced with all grant applicants/recipients/sponsors.

Lecturer/Lab Instructor/Lab Preparator/Greenhouse and Herbarium Technician
Plant Biology Department, University of Minnesota - St. Paul MN (8/84 – 9/92)
Prepared/presented lecture and lab materials for plant and general biology courses, taught labs in plant and general biology. Worked with departmental support staff to purchase and maintain needed materials for lab instruction. Wrote/graded all exams and gave final grades for the course.

EDUCATION
PhD in Botany from University of Minnesota, GPA: 4.0, St Paul MN (1992)

MS in Botany from Northern Illinois University, GPA: 4.0, Dekalb IL (1983)
Thesis title: Dynamics of development and degeneration of arbuscules in roots of Triticum aestivum L. Emphasis: Botany, electron microscopy

BS in Biology, German from Luther College, GPA: 3.8, Decorah IA (1980)
Concentration in botany, biology instruction, German, and modern dance.

Certificate German proficiency, University of Cincinnati, GPA: 4.0, Hamburg Germany (1978).
Studied German for 2 months and worked in a German company for 2 months.

High School Diploma, North Boone High School, GPA: 3.8, Poplar Grove IL (1976).

SKILLS - I HAVE:
Years of experience working with faculty, staff, and students supporting scientific research.
Collected, analyzed, and prepared scientific data for publication.
Setup and maintenance of web pages for Spatial Ecology Lab and UA Museum.
Supervised and trained students.
Have familiarity with UAF purchasing and other Business Office procedures.
Developed and maintained electronic inventory of lab hardware and software.
Liaised between technical support and end users, faculty, students, and vendors.
Worked well independently and with diverse people.

PUBLICATIONS


REFERENCES

Mary Pete, Kuskokwim Campus director, P.O. Box 368, 201 Akiak Dr, Bethel, AK 99559, 907/543-4502, ifmcp@uaf.edu

Pat Holloway, Georgeson Botanical Gardens director, University of AK, Fairbanks AK 99775, 907/474-5651, ffpsh@uaf.edu

Clara Johnson, Interior-Aleutians Campus director, P.O. Box 756720, Fairbanks AK 99775-7620, 907/474-5441, mcrj@uaf.edu
Kevin Jernigan  
Curriculum Vitae

P.O BOX 368  
Bethel AK 99559  
(907) 543-4576  
e-mail: lfkaj@uaf.edu

EDUCATION

2000-2006  
University of Georgia  
Ph.D., Anthropology  May, 2006.  
Comprehensive Exams: Ethnoecology, Medical Anthropology,  
Anthropology of Lowland South America.  
Dissertation: An Ethnobiological Exploration of Sensory and Ecological  
Aspects of Tree Identification among the Aguaruna Jívaro.  
Advisor: Brent Berlin  
Committee: Elois Ann Berlin, Steven Kowalewski

1998-1999  
University of Arizona  
Non-degree seeking graduate student.

1997  
University of Arizona  
BA in Chemistry.

1995-1996  
Moscow State University  
Visiting undergraduate researcher.

PROFESSIONAL EXPERIENCE

2008  
Assistant Professor of Ethnobotany, Kuskokwim Campus, University of Alaska Fairbanks, Bethel AK

2007  
Temporary Lecturer, Department of Anthropology, University of Georgia

TEACHING AND RESEARCH INTERESTS

- medical ethnobotany
- cognitive ethnobotany
- medicinal plants
- ethnopsychiatry
- medical pluralism
- conservation of culturally important plant species
- ethnopharmacology
- ethnoecology

LANGUAGE PROFICIENCY

Currently learning:  
Yup’ik

Fluent:  
English, Spanish
Proficient: Tunisian Arabic, Russian, Aguaruna

GRANTS AND FELLOWSHIPS

2004 National Science Foundation Dissertation Improvement Grant. “An Ethnobotanical Investigation of Tree Identification by the Aguaruna Jívaro of the Peruvian Amazon.”

2004 Wenner-Gren Research Grant. “A Study of Tree Identification among the Aguaruna Jívaro of the Peruvian Amazon.”

2003 CLACS Graduate Field Research Summer Travel Award. “A Preliminary Ethnobotanical Investigation of Tree Identification among the Aguaruna Jívaro of the Peruvian Amazon.”

2002 Ethnographic Research Training Grant. “A Preliminary Ethnobotanical Investigation of Tree Identification among the Aguaruna Jívaro of the Peruvian Amazon.”


FIELDWORK

June-July 2006 Research collaboration with Norbert Ross on the subject of children’s ethnobotanical knowledge among the Tzotzil Maya, Chiapas, Mexico.

Jan-Dec 2004 An ethnobotanical investigation of tree identification by the Aguaruna Jívaro of the Peruvian Amazon: Dissertation research to study the ecological and sensory clues that allow the Aguaruna Jívaro of the Peruvian Amazon to identify rainforest trees in their local environment.

June-Aug 2003 A preliminary ethnobotanical investigation of the tree identification among the Aguaruna Jívaro of the Peruvian Amazon: Predissertation ethnobotanical fieldwork with the Aguaruna Jívaro.

June-Aug 2002 A Preliminary ethnobotanical investigation of tree identification among the Aguaruna Jívaro of the Peruvian Amazon: Predissertation ethnobotanical fieldwork with the Aguaruna Jívaro.

June-Aug 2001 Dieting in traditional and integrative treatments of addiction in the Peruvian Amazon: Predissertation ethnographic fieldwork with urban mestizo populations in the Peruvian Amazon.

Sep 1997-June 1998 A study of herbalists and herbal medicine in the Suq el Belat of Tunis: Research conducted before enrolling in the anthropology graduate program at the University of Georgia.

TEACHING AWARDS
2006 Outstanding Teaching Assistant Award (Office of Instructional Support and Development, University of Georgia).

2006 Charles Hudson Anthropology Department Excellence in Teaching Award (University of Georgia).

PUBLICATIONS

Jernigan (in prep.) So they can go out and hunt: A study of Aguaruna ethnoveterinary medicine.


CONFERENCE PRESENTATIONS


CONFERENCES CHAIRED


TEACHING EXPERIENCE

University of Alaska Fairbanks, Kuskokwim Campus
Instructor for:
Summer 2008  EBOT 195  Introduction to Ethnobotany (field course, Quinhagak AK)
Fall 2008  EBOT 210  Ethical Wildcrafting
Fall 2008  ANTH 100  Individual, Society, and Culture

University of Georgia
Instructor for:
Summer 2007  ANTH 4031  Evolution of Human Cognition
Spring 2007  ANTH 3530  Anthropology of Folk Medicine
Spring 2005  ANTH 3530  Anthropology of Folk Medicine

Teaching assistant for:
Fall 2005  ANTH 4020  Indians of North America
Fall 2003  ANTH 3270  New World Archeology
Spring 2003  ANTH 4720  Forensic Anthropology
Fall 2002  ANTH 4030  Evolution of Human Cognition

Additional Classes Prepared to Teach:
Ethnobotany
Anthropology of Consciousness
Cultural Anthropology
Research Methods in Anthropology

SERVICE

2007 Faculty reader for Undergraduate Honor’s Thesis for Disha Chhabra: “Indigenous Use of Medicinal Plants and Herbs by the Pavacachi Community of the Ecuadorian Region of the Amazon Rainforest”
COMMUNITY OUTREACH

From Fall, 2000 to Spring, 2006, I acted as a volunteer in the Latin American Ethnobotanical Garden, (LAEG), on the University of Georgia campus. I participated in the upkeep of the garden and organized public education and outreach activities, including giving tours for children from local schools and a Boys and Girls club.

REFERENCES

Dr. Brent Berlin (Ph.D. advisor)
Department of Anthropology
University of Georgia
Baldwin Hall,
Athens, GA 30602-1619
phone: (706) 542-1452
e-mail: obberlin@uga.edu

Dr. Elois Ann Berlin
Department of Anthropology
University of Georgia
Baldwin Hall,
Athens, GA 30602-1619
phone: (706) 542-3922
e-mail: eaberlin@uga.edu

Mary Pete
Director
Kuskokwim Campus
POB 368
Bethel AK 99559
phone: (907) 543-4502
e-mail: lfmcp@uaf.edu

Dr. Glenn H. Shepard Jr.
University of East Anglia, UK, and
Instituto Nacional de Pesquisa da Amazônia (INPA), Manaus, Brazil
Conj. Villar Camara, R. 3, C. 105
Manaus, Amazonas, Brazil
69083-000D
phone: (55)(92) 644-3848
e-mail: GShepardJr@aol.com
## Appendix D

### Resource Commitment to the Proposed Ethnobotany Certificate Program

Using FY08 figures

<table>
<thead>
<tr>
<th>Resources</th>
<th>Existing</th>
<th>New</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>College/School</td>
<td>College/School</td>
<td>Others (USDA)</td>
</tr>
<tr>
<td>Regular Faculty (FTE’s &amp; dollars</td>
<td>10% English - $7,700,</td>
<td>100% EBOT - $75,106</td>
<td>$123,272</td>
</tr>
<tr>
<td>&amp; dollars including staff benefits</td>
<td>10% Biology - $8,375,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10% Math - $6,542,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10% Dev Studies - $10,517</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10% Librarian - $9,636</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5% Dev Math - $5,393</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjunct Faculty (FTE’s &amp; dollars)</td>
<td></td>
<td>$11,015</td>
<td>$11,015</td>
</tr>
<tr>
<td>Teaching Assistants (Headcount)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Instructional Facilities</td>
<td>Classrooms - 2755 SF</td>
<td></td>
<td>11,555 SF</td>
</tr>
<tr>
<td>(in dollars and/or sq.</td>
<td>Library - 8800 SF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>footage)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Office Space (Sq. footage)</td>
<td>UAF - 340 SF</td>
<td></td>
<td>770 SF</td>
</tr>
<tr>
<td></td>
<td>KuC - 430 SF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lab Space (Sq. Footage)</td>
<td>Computer Lab - 950 SF</td>
<td></td>
<td>1,545 SF</td>
</tr>
<tr>
<td></td>
<td>Bio/Chem/Phys Lab - 595 SF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer &amp; Networking (in dollars)</td>
<td>Use of connectivity,</td>
<td></td>
<td>$52,810</td>
</tr>
<tr>
<td></td>
<td>hardware &amp; software -</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$52,810</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research/Instructor/Office Equipment</td>
<td></td>
<td></td>
<td>$46,079</td>
</tr>
<tr>
<td>(in dollars)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support Staff (FTE’s &amp; dollars</td>
<td>5% Business Office - $6,401</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&amp; dollars including staff</td>
<td>5% Financial Aid - $3,876</td>
<td></td>
<td></td>
</tr>
<tr>
<td>benefits)</td>
<td>5% Student Services - 5,523</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5% LAN Manager - $3,949</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10% IT Specialist - $6,786</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10% IT Lab - $5,049</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10% Writing Center - $5,873</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10% Library Tech - 8,621</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supplies (in dollars)</td>
<td></td>
<td>$7,786</td>
<td>$7,786</td>
</tr>
<tr>
<td>Travel (in dollars)</td>
<td>Summer Science students</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>travel - $15,000</td>
<td></td>
<td>$62,842</td>
</tr>
</tbody>
</table>

Signature

Dean of College/School Proposing New Degree Program

Date
Appendix E: Example of EBOT Recruitment Posters and Logo - 1
Produced for KuC distribution, August 2008

Study Ethnobotany* (proposed) at the Kuskokwim Campus

Your pathway to a career in a variety of Ethnobotany fields starts at home.

Ethnobotany helps understand plants for food, medicine, get nutrition, and spiritual purposes. The Ethnobotany Certificate Program will seek to cultivate a greater sense of Alaska Native knowledge, teachings, and values in relation to the traditional plant resources which your community uses. With better understanding of these resources, you will have increased health and wellness, as well as educational and employment opportunities for rural Alaskan communities.

This certificate will be designed as a standalone or a culmination to an Associate of Science degree with an Ethnobotany focus and completion of this program is essential for some traditional and postgraduate degrees.

POSSIBLE CAREER FIELDS INCLUDE:
- Indigenous Plant Use Research
- Human Business Enterprise
- Impact Statement Consulting
- Environmental Science

Ethnobotany* training will be delivered online in the form of interactive conferences to allow students to remain in their home communities while pursuing their studies. Tuition, fees, and student travel are provided for the Alaska Native Department of Agriculture for Alaska Native students.
Appendix E: Example of EBOT Recruitment Posters and Logo - II
Produced for statewide distribution to 5 regional newspapers (Fairbanks Daily Newsminer, Tundra Drums, Nome Nugget, Arctic Sounder, Bristol Bay Times) August/September 2008

Science that builds careers and helps your community

(PROPPOSED)
ETHNobotany
- Home Business Entrepreneur
- Impact Statement Consultant
- Ecotourism Guides
- Indigenous Plant Use Research

(PROPPOSED)
ENVIRONMENTAL SCIENCE
- Environmental Technician
- Tribal Resource Management Coordinator
- Field Research Aid
- Ecological Monitoring Assistant

HIGH LATITUDE RANGE MANAGEMENT
- Natural Resource Management
- Biologist
- Environmental Scientist

VETERINARY SCIENCE
- Veterinary or Veterinary Technician
- Wildlife Disease Management
- Public Health Education
- Food Production and Safety

* The Ethnobotany and Environmental Science Programs are proposed and are pending approval of the University of Alaska Board of Regents and the Board of Regents on Colleges and Universities.
- The Ethnobotany and Environmental Science Programs are a collaborative effort with the Department of Agriculture, Department of Natural Resources, Department of Health and Social Services, and the University of Alaska Fairbanks. The programs are designed to provide students with the skills and knowledge necessary for careers in agriculture, natural resource management, and environmental science. For more information, please visit the websites listed below:
  - Alaska Agricultural Experiment Station: www.aes.uaf.edu
  - Alaska Science Center: www.asc.uaf.edu
  - Alaska Department of Agriculture: www.adag.state.ak.us
  - Alaska Department of Natural Resources: www.dnr.state.ak.us
  - Alaska Department of Health and Social Services: www.dhs.state.ak.us
Appendix F: Advisory Board Letter of Support
(Original copy being sent around for signatures)

To whom it may concern:

We enthusiastically support Kuskokwim Campus’s Ethnobotany Certificate Program that is being submitted for approval by the University of Alaska Fairbanks. As members of the Ethnobotany Advisory Board we have been closely involved with the development of this program over the past two years. We believe strongly enough in the importance of this program that we have volunteered our time, our expertise, and our creativity to help craft this to the best ethnobotany program possible for our students, our communities, the University, and the state of Alaska.

In the past two years individual members of this Advisory Board have acted as lecturers, mentors, spokespeople, and ambassadors for this program using such varied means as distance-delivery of courses, University departmental lectures, the Alaska/Hawaii student exchange program, and community (both academic and non-academic) outreach. The response that we’ve received has been extremely positive, with some even questioning “what took so long for this program to come into existence?”. We have volunteered for this because we know that this is a unique opportunity to create an interdisciplinary program what will fill a gap in the University’s offerings to rural Alaskans. Ethnobotany is already an integral part of the lives of rural Alaskans. Being able to provide an avenue to channel these life-skills into a culturally-relevant academic opportunity is a rare treat and we’re excited to help give birth to this “baby”.

Although this program will be based at the Kuskokwim campus, we have helped to design the Ethnobotany program to be exciting and relevant to all Alaskans.

Please add our unqualified support to this great program!

Signed,
The Ethnobotany Certificate Program Advisory Board

Ann Garibaldi, Ethnobotanist, Jones and Associates, Victoria BC
Craig Gerlach, PhD, Anthropology, UAF Main Campus
Pat Holloway, PhD, Director - Georgeson Botanical Garden, UAF Main Campus
Kevin Jernigan, PhD, Ethnobotany, KuC
Mary Pete, Director - KuC
Betty Rogers, Science Teacher, St. Paul School District
Gloria Simeon, Ethnobotanical Entrepreneur, Bethel AK
Steffi Ickert-Bond, PhD, Botany, UA Museum
Charles Walsh, Ethnobotanical Entrepreneur, Anchorage AK