University of Alaska Fairbanks

New Degree Program Request: Format 3

Bachelor of Arts in Fisheries

Bachelor of Arts

126 Credits Minimum

Submitted by
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Fisheries Division, School of Fisheries and Ocean Sciences
October 2007

I. Cover Memorandum

A. Name of Persons Preparing Request

This request prepared by Trent M Sutton, Undergraduate Fisheries Coordinator in the School of Fisheries and Ocean Sciences (SFOS), has been developed in direct collaboration with the faculty and staff in the SFOS Fisheries Division. Additional comments and expertise were provided on previous drafts of this new program proposal by the SFOS Curriculum Committee, the SFOS Marine Advisory Program, the SFOS Fishery Industry Technology Center, the University of Alaska School of Management and Department of Political Science, the Rasmuson Fisheries Excellence Committee, the Alaska Native Science and Engineering Program, the University of Alaska Anchorage Institute of Social and Economic Research and Logistics Department, and the University of Alaska Southeast – Ketchikan Fishery Technology Program.

B. Brief Statement of the Proposed Program

1. Overview:

Alaska's fisheries are entering a period of rapid change. Climate change influences the abundance and dynamics of fish stocks. Institutional changes (such as the rationalization of fisheries, federal imposition of subsistence priority, and the allocation of harvest to community development) continue to alter the structure and function of industry by promoting the emergence of industrial firms and Alaska Native organizations as dominant sectors in the fishing industry. Legal protections for threatened and endangered species and essential habitats and the development of new ecosystem-based management plans are continuously changing Alaska's fisheries.

The fisheries curriculum offered by the University of Alaska Fairbanks (UAF) through the School of Fisheries and Ocean Sciences (SFOS) must meet the challenges. The health of Alaska's biologically and ecologically sustainable fisheries, the growth and development of Alaska's economy, and the persistence of traditional subsistence communities require that we train and educate scientists and managers with a wide range of knowledge and experience to confront these challenges.

Alaska's fisheries provides unique opportunities not available elsewhere. Students studying fisheries in Alaska will work with robust stocks, healthy ecosystems, effective management, and a highly diverse community of users and harvesters. Fisheries students at UAF will have direct experience with public agencies that play a vital role in fisheries science and management, a vibrant fishing industry, and nongovernmental organizations with a strong interest in a sustainable fishery. In developing curricula to meet the challenges of changing times, the SFOS faculty can take advantage of the opportunities available in fisheries science and management found only in Alaska.

Alaska's vision of sustainable development of its fishery resources requires that we offer a broad academic curriculum to our future fisheries managers and

scientists. Currently, fisheries curricula at UAF and at other universities in North America focus primarily on the conservation of biological resources and the sustainable harvesting of stocks. While the need for these programs will continue, other academic disciplines must be included to address the unique characteristics of Alaska's fisheries.

We envision a new undergraduate curriculum within SFOS, a Bachelor of Arts in Fisheries. This degree will be offered by many of the same faculty that offer our Bachelor of Science in Fisheries degree, and the two curricula would share some courses. The Bachelor of Arts degree would still require students to complete coursework in the fundamentals of fishery biology but would expand that curriculum to include course requirements in one of several potential concentrations, including Business Management (Fisheries, Harvesting, and Processing), Food Science, Policy, or others.

An essential component of the new degree program is the integration of an experiential learning/internship experience into the curriculum. Successful applicants to this program will work as interns with SFOS partners, including private industry firms, public agencies, and nongovernmental organizations. The addition of an internship component to the B.A. curriculum will also strengthen our current Bachelor of Science in Fisheries by providing additional opportunities for experiential learning to all of our fisheries students.

As a Bachelor of Arts degree, our new fisheries degree will require students to complete a minor. Students must satisfactorily complete the requirements for a minor before a B.A. degree is awarded. A minor from UAF consists of a minimum of 15 credits, at least three (3) credits of which have to be earned at UAF. Students must earn a cumulative GPA of at least 2.00 (C) in the minor and follow minor requirements from the same academic catalog used for their baccalaureate program. An Associate of Applied Sciences degree earned at any regionally accredited college or university may also be used to meet requirements for a minor in B.A. degree programs. Appropriate minors for B.A. Fisheries students could include any offered at UAF, but most likely would focus on some aspect in business administration, political science, anthropology, or rural development.

2. Objectives:

The objective of this proposed Bachelor of Arts in Fisheries degree program is to provide students with the knowledge base, skill sets, and hands-on experience to be highly competitive in obtaining positions within the fishing and seafood processing industries in Alaska. To meet this need, the University of Alaska Fairbanks will be the university of choice for training and educating the fisheries and marine resource experts needed to sustain and grow Alaska's vital fishing and seafood industries. As one of the premier fisheries and ocean sciences programs in the nation, the UAF School of Fisheries and Ocean Sciences will educate the professionals necessary to guarantee the sustainability of Alaska's vast and healthy marine and freshwater resources.

This proposed degree program will increase student recruitment and retention at UAF, with a particular emphasis on Alaska Native and rural Alaskan students. We also anticipate that this degree program will support the long-term sustainability of fisheries in Alaska.

3. Career Opportunities:

Undergraduates that completed the Bachelor of Arts in Fisheries degree program would be competitive for a wide variety of agency and organization positions, particularly within the state of Alaska. For example, graduates with a Bachelor of Arts in Fisheries would be qualified to work for traditional fisheries governmental agencies, such as the Alaska Department of Fish and Game, U.S. Fish and Wildlife Service, U.S. Forest Service, or Bureau of Land Management in the areas of business administration, policy development, fisheries education and outreach, or as social scientists. Alaska Native Organizations, such as the Association of Village Partnerships, Bristol Bay Native Association, Tanana Chiefs Conference, or Kuskokwim Native Association, would want to hire these students in the same capacity, as well as from the standpoint of rural community development. Fishing organizations, such as the six (6) CDQ (Community Development Quota) programs in Alaska, would also hire students in the aforementioned areas as well as in fisheries quota management. Relevant organizations include the Yukon Delta Fisheries Development Association, Norton Sound Economic Development Corporation, and Aleutian Pribilof Island Community Development Association. Private non-profit salmon hatchery corporations, including the Prince William Sound Aquaculture Corporation, Cook Inlet Aquaculture Association, and Northern Southeast Regional Aquaculture Association, would be interested in hiring students to serve as hatchery managers and outreach specialists in their respective communities. Finally, the Alaskan seafood processing industry, the largest private-sector employer in the state, would want to hire students with a B.A. in Fisheries with expertise in accounting, finance, marketing, organizational management, and other areas of business administration to help run their organization. Peter Pan Seafoods, Ocean Beauty Seafoods, and Icicle Seafoods are businesses that have expressed interest in this program. Through the proposed Bachelor of Arts in Fisheries, we will prepare students for these job opportunities by providing valuable, practical experience, individualized instruction and on-the-job training, application of classroom theories in the real world, and networking with people in the chosen career field. These attributes will better prepare students for post-graduation employment and, consequently lead to a higher employability for our graduates. Not only will our students be prepared for the specific requirements associated with the agencies and organizations listed above, but they would also be well qualified for similar jobs throughout North American through the unique program that we propose to deliver.

C. Approval Signatures

Director, Fisheries Division	**Date**
Curriculum Council Chair, **School of Fisheries and Ocean Sciences**	**Date**
Dean, School of Fisheries and Ocean Sciences	**Date**
President, UAF Faculty Senate	**Date**
Chancellor, UAF	**Date**
President, University of Alaska	**Date**
Board of Regents	**Date**

II. Identification of the Program

A. Description of the Program

1. **Program Title:**
   Bachelor of Arts in Fisheries

2. **Credential Level of the Program:**
   Bachelor of Arts degree

3. **Admissions Requirements and Prerequisites:**
   There are no special admissions requirements for the Bachelor of Arts in Fisheries degree program. As a result, admission to the program is open to all individuals, especially those individuals with an interest in business administration, finance, accounting, policy, and/or education and outreach in addition in the field of fisheries. Prospective students must have a strong motivation in natural resources issues, particularly as they pertain to fisheries and fish stocks within the context of business administration, policy, or other areas of the social sciences. There is no minimum grade point average.

4. **Course Descriptions of Required Courses (outside of the university core course requirements):**

   FISH 101 3 Credits
   Introduction to Fisheries
   A survey of the values, habitats, biology, ecology and management of fishes with particular reference to Alaska fisheries and issues. (3 + 0) Offered Fall.

   FISH 261 3 Credits
   Introduction to Fisheries Utilization
   Application of harvesting, processing, preservation and marketing of Alaska's rich fisheries resources. Core course requirement for all B.A. students completing a minor in fisheries. Serves as an elective for B.S. fisheries students. (Prerequisites: CHEM 105X or BIOL 105X or permission of instructor.) (3+0) Offered Spring beginning 2009.

   FISH 288 3 Credits
   Marine and Freshwater Fishes of Alaska
   Biology of the marine and freshwater fishes of Alaska including their evolutionary relationships, biogeography, life-history, ecology, behavior and importance to people. (Prerequisites: FISH 101 or permission of instructor.) (3+0) Offered Spring.

   FISH 490 1-4 Credits
   Experiential Learning Internship
   Under the supervision and mentorship a fisheries faculty member and a qualified professional, students will gain practical experience in fisheries within a professional setting. Requirements and credits for the internship will be decided prior to the student's enrollment and employment based on a 3-way cooperative agreement between the employer, student and a fisheries faculty sponsor. (1+0)

Offered Fall, Spring, Summer. (Prerequisites: STAT 200, STAT 401, and FISH 315) (0 + 3-12) Offered Fall, Spring, Summer.

MSL 111 4 Credits
The Oceans
Study of the oceans from the broad perspective offered by combining insights from biology, physics, chemistry and geology. Topics include the evolution of the oceans and marine life, forces acting on water and the resulting currents and waves, and relationships between the physics and chemistry of water bodies and their biological productivity. Societal questions related to fisheries management, global climate change and pollution will be discussed. (3 + 3) Offered Fall, Spring.

ENG 314W, O/2 3 Credits
Technical Writing (h)
Writing business letters (letters of inquiry, complaint, evaluation and job application with resume), preparing tables, graphs, process descriptions, technical instructions, abstracts, grant proposals and technical reports (progress, laboratory, survey, incident, inspection, feasibility and research). Course does not fulfill the second half of the requirement in written communication. Also available via Independent Learning. (Prerequisites: COMM 131X or 141X; ENGL 111X; ENGL 211X or 213X; junior standing; or permission of instructor). (3 + 0) Offered Fall, Spring.

AIS 101 3 Credits
Effective Personal Computer Use
Using and understanding advanced computing software applications. Course develops conceptual and practical knowledge of advanced presentation/communications software, database programs and operating systems. (3 + 0) Offered Fall, Spring

BA 307 3 Credits
Introductory Human Resources Management
Introduction to management principles and personnel practice in industry, analysis of labor-management problems, methods and administration of recruiting, selecting, training and compensating employees, and labor laws and their applications. Also available via Independent Learning. (Prerequisite: Upper-division B.B.A. standing or permission of the SOM advisor.) (3 + 0) Offered Fall, Spring.

BA 330 4 Credits
The Legal Environment of Business
The judicial system, legal processes, administrative procedures, law of torts, contract and agency government regulation of business, business ethics, corporate social responsibility and the uniform commercial code. Also available via

Independent Learning. (Prerequisite: Upper-division B.B.A. or MBA standing, or permission of the SOM advisor.) (4 + 0) Offered Fall, Spring

BA 343 3 Credits
Principles of Marketing
Management of a firm's marketing effort focusing on products, distribution, pricing and promotion to targeted consumers. Practices appropriate to domestic or international, small or large, goods or services and for-profit or nonprofit organizations included. Also available via Independent Learning. (Prerequisite: AIS 101 or equivalent; STAT 200X, upper-division B.B.A. or MBA standing or permission of the SOM advisor.) (3 + 0) Offered Fall, Spring

BA 390 3 Credits
Organizational Theory and Behavior
Understanding how and why organizations behave as they do, assessing whether the behavior is functional or dysfunctional, and learning to understand and change motivation, leadership, communications, group dynamics, conflict management, layout, technology, structure and policies to create high-functioning organizations. (Prerequisite: Upper-division B.B.A. or MBA standing or permission of the SOM advisor.) (3 + 0) Offered Fall, Spring.

ACCT 261 3 Credits
Accounting Concepts and Uses I (s)
An understanding of basic financial statements from a user perspective (investors, managers and creditors) is strongly emphasized. Topical coverage of financial and managerial issues is integrated throughout the semester. Material is presented in a fashion that promotes development of communication skills. The conceptual approach used in this course will sensitize the student to the implications of accounting decisions related to business transactions, while avoiding the detailed procedures that only accountants need to know. (Prerequisites: Sophomore standing or higher; placement, concurrent enrollment, or completion of MATH at the 100-level or above.) (3+0) Offered Fall, Spring.

ACCT 262 3 Credits
Accounting Concepts and Uses II
Continuation of ACCT 261 with introduction of advanced topics. (Prerequisite: ACCT 261.) (3 + 0).

ECON 200 4 Credits
Principles of Economics (s)
Goals, incentives and outcomes of economic behavior with applications and illustrations from current issues: operation of markets for goods, services and factors of production; the behavior of firms and industries in different types of competition; and income distribution. The functioning and current problems of the aggregate economy, determination and analysis of aspects of international exchange. Also available via Independent Learning. (Prerequisite: MATH 161X

or MATH 107X. Sophomore standing or permission of instructor.) (4 + 0 + 1) Offered Fall, Spring.

ECON 235 3 Credits
Introduction to Natural Resource Economics (s)
Microeconomic principles and their application to natural resource issues. Topics include supply, demand, marginality, optimality, elementary production economics, economic rent and comparative advantage. These principles applied to agency budget allocation decisions, multiple use, resource valuation, conservation, market failure and public outdoor recreation problems. (3 + 0) Offered Fall.

NRM 407 3 Credits
Environmental Law
The role of common law theory in regulatory, statutory and constitutional interpretation in the field of environmental protection, including air and water pollution, toxic/hazardous substances and land-use regulation. (Prerequisite: Junior or senior class standing or permission of instructor.) (3 + 0) Offered Spring.

PS 447 3 Credits
U.S. Environmental Politics
(Stacked with NORS 647)
Examination of U.S. political institutions as they relate to making policies for protecting the quality the natural environment. The politics of nuclear waste, endangered species, air and water pollution, and wilderness preservation. Analysis of the National Environmental Policy Act, sustainable development, limits to growth and other topics. Course is also available online. (Prerequisites: Graduate standing or permission of instructor. Recommended: PS 101.) (3 + 0) Offered Alternate Spring.

HIST 411 3 Credits
Environmental History (s)
(Stacked with NORS 611)
Discussion of significant works of environmental history. Cultural history of the landscape in world civilization with emphasis on Western Europe and North America. Discussion of interdisciplinary approaches to the history of the environment and cooperative work across disciplines. (Prerequisites: HIST 100X; HIST 275 or permission of instructor and either ENGL 211X or 213X. Recommended: An introductory biology course.) (3 + 0) Offered Alternate Spring.

RD 300W 3 Credits
Rural Development in a Global Perspective (s)
The relationship between rural communities and the global economy, with an emphasis on sustainable development. Highlights the multiple meanings of "development" and issues of population growth, environmental change, gender and indigenous peoples as they relate to rural development. Includes an introduction to the basic concepts and theories of development. (Prerequisite:

ENGL 111X; ENGL 211X or ENGL 213X; Junior standing or permission of instructor.) (3 + 0) Offered Fall

RD 350O 3 Credits
Indigenous Knowledge and Community Research
Community research approaches and techniques. Emphasis on the role and need for community-based research and ethical issues associated with it. Students use a hands-on approach to learn about oral history documentation, surveys of community assets and needs, and basic community survey techniques. (Prerequisites: COMM 131X or 141X.) (3 + 0) Offered Fall.

RD 430 3 Credits
Indigenous Economic Development and Entrepreneurship
An understanding of the principles, strategies and practices of economic development and entrepreneurship with a focus on indigenous Alaska communities. Focus is on those elements of economic development as they apply to indigenous communities and their abilities to create sustainable economic activities through culturally appropriate practices, and those activities which create and sustain community wealth and health. (3 + 0) Offered Spring

ANTH 403W, O 3 Credits
Political Anthropology (s)
(Stacked with ANTH 603)
Political systems and the law. Case studies from nonindustrial societies, developing nations and parapolitical systems or encapsulated societies, such as Native peoples in the U.S. Political structures and institutions; social conflict, dispute settlement, social control and the law, political competition over critical resources; and ethnicity. (Prerequisites: ANTH 215; COMM 131X or 141X; ENGL 111X; ENGL 211X or ENGL 213X; or permission of instructor. Next offered: 2008-09.) (3 + 0) Offered Alternate Spring.

ANTH 428 3 Credits
Ecological Anthropology and Regional Sustainability (n)
Biological, environmental and cultural factors and their interplay in defining the human condition, with examples from the Arctic and other populations. (Prerequisites: ENGL 111X, ENGL 211X or ENGL 213X, Junior standing, or permission of instructor. Next offered: 2007-08.) (3 + 0) Offered Alternate Spring.

5. Requirements for the Degree:
For an example of the sample course of study for the Bachelor of Arts in Fisheries, including information on the four-year cycle of course offerings, see Appendix 1. An example of the proposed general catalog layout copy of the degree program can be found in Appendix 2.

B. Program Goals

1. **Objectives and Learning Outcomes:**
   The objective of this proposed Bachelor of Arts in Fisheries degree program is to provide students with the knowledge base, skill sets, and hands-on experience to be highly competitive in obtaining positions within the fishing and seafood industries, as well as state, federal, and tribal natural resources management agencies in Alaska. In terms of specific educational outcomes for undergraduates in the Bachelor of Arts in Fisheries program, the following core learning objectives have been identified:

   1. Have an understanding of the biology of fishes and other aquatic organisms. An emphasis should be placed on the functional role of these organisms in terrestrial and aquatic ecosystems.

   2. Have an understanding of how business administration, economics, finance, organizational management, and policy dictate the decision-making process associated with fisheries management.

   3. Have the ability to critically review and evaluate field and laboratory data and make appropriate conclusions about the use of this information that allows for science- and business-based decision making.

   4. Have the ability to effectively communicate with other professionals and laypersons using written, oral, listening, and technological skills.

   5. Have an understanding of and appreciation for the influence of human wants and desires on the conservation and management of fisheries and aquatic organism resources, including social, political, economic, and legal aspects of natural resource conservation.

   6. Have an understanding of our diverse world and how humans and natural resources are interconnected with other parts of Alaska, North America, the biosphere, and all peoples inhabiting those areas.

   7. Have an understanding of social responsibility, the ethical use of natural resources, and our obligations as stewards of the planet.

   8. Have an understanding that humans have a right and responsibility to evaluate and embrace change by critically reviewing the effects of information and technology as they relate to natural resources and the world.

   9. Have the ability to effectively work in situations that require team and leadership skills.

   10. Have an appreciation for and understanding of the need for lifelong learning and developing professional skills.

2. Relationship to the UAF Mission:

The relationship of the Bachelor of Arts in Fisheries objective to the academic mission of UAF is one that provides high quality, cutting edge education to undergraduates for students seeking a career in the fishing or seafood technology industry or whose career is largely focused on human interactions in fisheries. The following core mission areas have been identified in the UAF strategic plan 2009:

1. Serve students;
2. Provide quality educational opportunities and experiences;
3. Excellence in research;
4. Build and maintain strength in faculty and staff;
5. Be responsive to the needs of the state of Alaska;
6. Development of technology and facilities.

As will be identified throughout the remainder of this proposal, the Bachelor of Arts in Fisheries degree program, along with the general revitalization of the SFOS Fisheries program, directly meets each one of these six (6) strategic plan core mission areas.

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3. Occupational Competencies to be Achieved

The proposed Bachelor of Arts in Fisheries degree program will offer enrolled undergraduates the unique ability to combine business administration, finance, accounting, marketing, organizational management, policy development, and rural community development skills with their technical knowledge of fisheries management issues within the context of the Alaskan fishing and seafood industries.

1. To develop knowledge of the basic principles and strategies utilized to assess and manage marine and freshwater fish stocks of economic interest, and to understand the business, economic, financial, marketing, organizational management, and/or policy development and implementation procedures relevant to fisheries management within the context of the fishing and seafood industries.

2. To provide practical experience in fishery-resource assessment, data analysis and reporting, and decision making as it pertains to fishing and seafood industry issues and scenarios.

3. To sharpen critical thinking, written and oral communication, and professional skills relative to fisheries and management resource issues within the context of the fishing and seafood industries.

These occupational competencies will prepare graduates in the areas of business administration, policy development, fisheries education and outreach, or other areas of social science for use as managers within agencies and organizations

associated with the fishing or seafood processing industries. Further, the training outlined in this proposal would prepare science-based professionals for a career in administration and decision making within their respective agency or organization.

4. Relationship of Courses to the Program Objectives

The courses outlined below for completion in this degree program provide the necessary knowledge and experience in the three competency areas identified above. The emphasis on introductory courses is on the acquisition of knowledge. Later courses in the program focus on formal and informal experiential learning, which is the primary thrust of this degree program. The electives associated with humanities and social sciences, along with the chosen minor focus, serve to broaden and deepen the program content. This emphasis will be met while ensuring that a primary importance is placed on fisheries issues in Alaska.

III. Personnel Directly Involved with Program

A. Faculty Involved, including their Duties and Qualifications

Our current SFOS fisheries faculty will be directly involved in this new initiative. As noted above, the new B.A. in Fisheries curriculum will share many courses with the current, revised B.S. in Fisheries degree option, a program in which many of our faculty are now instructors. This program will also require participation of faculty in other programs at UAF (Natural Resources Management, Biology, Business Administration, Economics, Accounting, Political Science, Anthropology, History, Rural Development), and we have received support from the program heads in these units for this initiative. The listing below shows the current fisheries faculty and the undergraduate fisheries courses they teach. It also lists the area(s) of expertise in which new courses to support the curriculum could be developed in the future. In addition, five (5) new tenure-track faculty will be hired by fall 2008 to assist in the delivery of the academic program. These positions include the following areas: (1) fisheries biometrician; (2) benthic shellfish ecologist; (3) curator of fishes; (4) physiological ecologist; and (5) fisheries human dimensions specialist. Current SFOS fisheries faculty members are listed below:

Milo Adkison, Associate Professor
Current Undergraduate Courses: FISH 421 – Fish Population Dynamics
Potential Undergraduate Courses in area of expertise: Quantitative techniques, conservation biology and harvest management

Keith Criddle, Ted Stevens Distinguished Professor of Marine Policy
Current Undergraduate Courses: No current courses, new hire – July 1, 2006
Potential Undergraduate Courses in area of expertise: Marine policy analysis, bioeconomics, applied statistics

Anthony Gharrett, Professor
Current Undergraduate Courses: BIOL 362 – Genetics

Potential Undergraduate Courses in area of expertise: fisheries genetics, molecular techniques, evolutionary genetics

Nicola Hillgruber, Assistant Professor
Current Undergraduate Courses: FISH 427 – Ichthyology
Potential Undergraduate Courses in area of expertise: ecology of marine fishes, larval fish biology

Gordon Kruse, Professor
Current Undergraduate Courses: None
Potential Undergraduate Courses in area of expertise: management of marine ecosystems, spatial analysis, fishery oceanography

Terrance Quinn III, Professor
Current Undergraduate Courses: None
Potential Undergraduate Courses in area of expertise: fish population dynamics, renewable resource management, applied statistics

Amanda Rosenberger, Assistant Professor
Current Undergraduate Courses: FISH 101 Introduction to Fisheries, FISH 425 Fish Ecology, FISH 490 – Experiential Learning Internship, FISH 499 Fisheries Senior Thesis
Potential Undergraduate Courses in area of expertise: fisheries techniques, climate change, community ecology, landscape ecology

William Smoker, Professor and Director
Current Undergraduate Courses: FISH 436 – Salmon Aquaculture
Potential Undergraduate Courses in area of expertise: biology of Pacific salmon, conservation of Pacific salmon, scientific writing for fisheries science, aquaculture

Trent Sutton, Associate Professor
Current Undergraduate Courses: FISH 315 Fisheries Techniques, FISH 487 – Fisheries Management
Potential Undergraduate Courses in area of expertise: fish ecology, fish population assessment, ichthyology

Most of our fisheries faculty currently teach undergraduate courses, with several of them using distance delivery to do so. With an increasing undergraduate student population attracted to this new B.A. in Fisheries program, our faculty will expand their undergraduate teaching activities. Further, it is likely they will add undergraduate courses in their areas of interest that we have not yet anticipated as the program evolves. In addition, the broader program will provide opportunities for our Marine Advisory Program faculty to participate more fully in this B.A. degree program than they have in the current B.S. degree.

B. Administrative and Coordinating Personnel

The following four individuals serve directly in the administration and coordination

of the undergraduate fisheries program. Three of the four personnel have had direct involvement in the development of this proposal and will remain involved in the Bachelor of Arts degree program in the capacities stated below.

Distance Learning Coordinator (to be hired for fall 2008)
Responsibilities: Coordination and management of the video conference equipment and other distance learning capabilities, teach classes, conduct research, student advising, develop principles and policies related to distance education in fisheries

Katie Murra, Recruitment and Retention Coordinator
Responsibilities: Student recruitment and retention, enrollment management plan, education and outreach, undergraduate advising

Amanda Rosenberger, Experiential Learning Coordinator
Responsibilities: Coordination and management of the experiential learning internship program, independent study research, and senior thesis research, teach classes, conduct research, student advising

Trent Sutton, Undergraduate Fisheries Coordinator
Responsibilities: Overall coordination and management of the undergraduate B.S. and B.A. in Fisheries programs, supervisor of the three aforementioned coordinators, teach classes, conduct research, student advising, student recruitment and retention

C. Classified Personnel

The following two individuals are both directly and indirectly involved in the undergraduate fisheries program. Both individuals have had involvement in the development of this proposal and will remain involved in the Bachelor of Arts degree program in the capacities stated below.

Carin Bailey, Public Information Officer
Responsibilities: Student recruitment, web-page maintenance, program press releases

Christina Neumann, Academic Program Manager
Responsibilities: Coordination and management of the SFOS academic programs

IV. Enrollment Information

A. Projected Enrollment/Survey Information

Over the past 10 years, the annual undergraduate enrollment in the Bachelor of Science in Fisheries program has ranged from 18 to 29 students. However, over the past five years, student enrollment in this program has averaged 25 students. There has been recent interest expressed by students at UAF, UAS, and UAA for a Bachelor of Arts in Fisheries degree program. Given the revision to the B.S. program and this new B.A. degree, the undergraduate enrollment in Fisheries is expected to increase to 50 students in Academic Year (AY) 2009. As the program evolves and grows, it is anticipated that the combined student enrollment in the B.S. and B.A. in fisheries

programs will increase to 100 in AY 2012. In addition, it is anticipated that the Alaska Native and rural Alaskan student enrollment will increase from its present level over the past five years (1 to 5 students) to 10 to 15 students in AY 2009. Based on this anticipated increase in enrollment, the number of graduates each year is expected to increase from 2 (current average) to 6 student per year in AY 2009, 20 per year in AY 2012, and then stabilize at 20 graduates per year for program years 5 to 20.

The most important measure of success is the number of graduates who complete the program and are gainfully employed in their profession. With the number of faculty and resources anticipated during the course of this program, we consider 20 graduates per year for the mature, combined B.S. and B.A. in Fisheries degree options at five years to be the sustainable level of productivity for the next 15 years.

In summary, the performance measure for undergraduates completing the program would be:

Year	Graduates	Students Enrolled
Year 1	2	25
Year 3	6	50
Year 5	20	100
Year 10	20	100
Year 20	20	100

B. Minimum Enrollments

The minimum number of students for the fisheries program would be 20 students per year, which is where the B.S. in Fisheries program has been at or near for the past decade. A total of 40 students in the combined B.S. and B.A. in Fisheries programs would be the minimum expected enrollment to make the programs viable.

C. Maximum Enrollment

The maximum enrollment for this program is 100 students total (combined B.S. and B.A in Fisheries), with an average cohort enrollment of 25 students per year.

E. Special Restrictions

There are no special restrictions required for the Bachelor of Arts in Fisheries degree program.

V. Need for Program

A. Required for Other Programs

While there are no other degree programs at UAF that require any of the components of the Bachelor of Arts in Fisheries, there are classes shared with the Bachelor of Science in Fisheries degree program. There are no organizations, agencies, or other professional entities that require a Bachelor of Arts in Fisheries to meet any qualifications or certifications.

B. Employment Market Needs

Over the past two years, SFOS faculty members have surveyed the Alaskan fishing industry and its regulators to determine how our fisheries program can be broadened to serve a larger sector of Alaska's fishing community (see Appendix 3 for survey questionnaire). Faculty members in SFOS have visited fishing companies, seafood processors, and industry regulators to gather standardized information about industry needs and potential areas for growth. Our Marine Advisory Program faculty (in Unalaska, Anchorage, Bethel, Sitka, Homer, Cordova, Dillingham, Petersburg, Kodiak, and Ketchikan) has organized meetings to determine the specific needs of Alaska's coastal communities. We have also completed a written survey of 244 individuals and groups involved in Alaska's fishing industry. The information acquired from these meetings, visits, and surveys has been compiled and was used to formulate a new Bachelor of Arts in Fisheries curriculum.

Alaska Sea Grant, a unit within SFOS, conducted a similar survey of 1,000 Alaskans while formulating their strategic plan in 2006. Their assistance in the survey process has been beneficial. In addition, we have sought input from the UAA Institute for Social and Economic Research (ISER) on how to structure the survey document to be most effective. As a consequence, we feel that the survey results, which strongly guided development of the degree program presented in this proposal, accurately reflected the fishing and seafood industry needs in Alaska.

To date, there has been no formalized degree program that has been formulated to address the needs of a liberal arts degree in fisheries. As a result, fisheries industry professionals in Alaska have had a primarily science degree out of a Bachelors of Science program (such as the B.S degree in Fisheries offered by UAF SFOS) or have a primarily business, political science, social science, or anthropology degree out of a Bachelor of Arts program. Our proposed degree melds those two programs so that students receive a basic foundation in the biological sciences and fisheries and a broad background in business and political science/policy.

VI. Other

There are no other needs to report relevant to the Bachelor of Arts degree program.

VII. Resource Impact

A. Budget

To undertake this initiative, the SFOS has received a $5 million grant from the Rasmuson Foundation with a $5 million match from UA Statewide. These funds will be used over the next six (6) years to hire new faculty, renovate teaching classrooms and laboratories, purchase field and laboratory equipment, recruit and retain students through scholarships and other initiatives, and meet other teaching needs (such as distance delivery of classes) associated with the delivery of the fisheries program.

Funding is being sought, at $1 million per year, to cover program maintenance costs following the completion of the Rasmuson Foundation grant and UA statewide match. The prognosis is good that these funds will be secured for the long-term delivery of this initiative from the Alaska legislature. These new funds will primarily

be used to cover new faculty salaries and fringe, as well as general program maintenance and teaching costs, as the costly expenditures (e.g., infrastructure, equipment, etc.) will have been covered by the Rasmuson Foundation grant and UA Statewide match. In addition, the new faculty are expected to increase SFOS research capacity by approximately $1,500,000. These funds will be used to support undergraduate and graduate students and provide supplies, equipment, and summer faculty salaries. The overhead returned to SFOS by UAF on these new research funds would provide about $200,000 per year to support program activities. Finally, increasing the number of enrolled undergraduates in the B.S. and B.A. curricula from the current 25 to 100 students should add approximately $100,000 to our budget as part of the tuition that is returned to the school that generated the enrollment. Therefore, we anticipate the program will have a sustained annual budget of $1.3 million at the end of the original grant and match. We will not rely solely on the funds provided by UAF to continue this initiative. The SFOS is currently in the process of hiring a Development Officer, and this individual and the Dean will continue a vigorous effort to find external funds to support this degree program.

B. Facilities/Space Needs

A total of $500,000 has been allocated by UAF to SFOS to develop and refurbish teaching classrooms and laboratories. To date, both classrooms in the O'Neill Building (rooms 201 and 214) have been completed. Room 214 has been outfitted with video conference equipment and is a functional teaching room that can hold up to 20 students. Room 201 will be outfitted with its video conference equipment by the end of 2007. This room can hold up to 50 students and will also serve in the capacity as a model "Smart" classroom. Offices for three of the new fisheries faculty in O'Neill Building have been completed and two of these offices are currently occupied by Amanda Rosenberger (207B) and Trent Sutton (207C). A five-room laboratory complex in the Arctic Health Research Building is slated to be refurbished during winter and spring of 2008 and available for use for the fall 2008 semester. The Lena Point facility, which houses SFOS faculty, staff, and students in Juneau, will be completed in fall 2008. This facility will have a number of teaching classrooms and laboratories, and teaching rooms will be outfitted with video-conference equipment. Finally, SFOS teaching facilities in Seward and Kodiak will also be outfitted with video-conference equipment for the distance delivery of classes. It should be noted that all video-conference equipment purchased and installed in SFOS facilities will be the same so as to minimize problems in interfacing among locations for the offered courses in fisheries.

C. Credit-Hour Production

The Bachelor of Arts in Fisheries degree program will provide a significant increase in credit-hour production for UAF by attracting new students, particularly Alaska Natives and rural Alaskans. Assuming that 100 students ultimately enroll in the combined B.S. and B.A. in Fisheries programs and that the average student takes 15 credit hours per semester, credit-hour production would be expected to be approximately 1,500 credit hours per semester.

D. Faculty

Five new faculty members in Fisheries will be hired in SFOS prior to the start of the fall 2008 semester. In addition, two faculty members (Amanda Rosenberger and Trent Sutton) have already been hired in Fisheries in support of this program. Further, there will be three additional hires in Oceanography and these positions will serve to interface the Fisheries and Ocean Observing programs. One of our new faculty members (Trent Sutton) has been designated as the Undergraduate Fisheries Coordinator with the responsibility for overseeing the development and maintenance of this program. In several years, a distinguished visiting professor will be brought in to Fairbanks or Juneau to interact with our faculty and students to broaden the program.

E. Library/Media Materials, Equipment, and Services

The Rasmuson library faculty and staff have worked with SFOS faculty over the past several years to remain current with their library holdings in fisheries. The library also holds subscriptions to all of the major periodicals required to support this program. Many journals can now be accessed online, which will minimize the impact on library resources. As a result, the impact of this degree program on library resources will largely be limited to Internet-based resources, with information transmission and book mailing completed by library staff.

In order to make this degree program accessible at other UAF facilities, UA campuses, and rural communities, distance-learning equipment has been or will be upgraded at all SFOS locations to allow faculty at any location to deliver instruction at any other location. A new high-definition distance learning system will be used to assure the best quality communication. Desktop computers will also be purchased for students at UAF campuses in Fairbanks and Juneau (where almost all of the undergraduates will be housed) so that they have access to the computational capabilities needed for some of the classes. Field and laboratory equipment for fisheries and ocean sciences instruction will be upgraded to assure that our students have access to the top-of-the-line equipment available at other institutions. Funds to cover these initiatives have been provided by the Rasmuson Foundation.

VIII. Relation of Program to other Programs within the System

A. Effects of Enrollments Elsewhere in the System

The creation of a Bachelor of Arts in Fisheries does have the potential of impacting student enrollment in other degree programs with the UA system, particularly at UAF. We do not necessarily anticipate drawing students from other programs. Instead, we anticipate an increase in student enrollment which would have the positive benefit of increasing credit-hour production in fisheries courses as well as courses in those degree programs intricately involved in this program (e.g., Business Administration, Political Science). This degree program does have the support of Interim Dean of the School of Management (Mark Hermann) and the Department Head of Political Science (Gerald McBeath).

B. Duplication/Approximation of Other University Programs

There is no duplication or approximation of other programs at UAF. Currently, there is no Bachelor of Arts in Fisheries designed to specifically meet the Alaskan fishing

and seafood industry needs. In addition, our program is unique in that it is the only Bachelor of Arts in Fisheries program developed to meet such a need anywhere in North American and potentially the world, and reflects the distinct opportunities available only in Alaska.

C. Relation to Research and Service Activities

1. Research:

Alaska's natural resources and vibrant fishing industry will play an essential role in our new curriculum. Students will interact directly with Alaska's fishing industry and its regulators through a required internship. While the traditional classroom setting can be limited in providing "real-world" education, UAF fisheries students will gain direct experience in the workplace and field. Learning in the workplace through internships, particularly in a subject such as fisheries, is a crucial component of an undergraduate education. These internships are an ideal way to combine classroom learning with work experience in the public and private sectors. The survey being conducted currently includes questions on the ability and willingness of the respondents to provide paid internships for our students. Through these internship experiences, students will be able to develop independent study and senior thesis research projects. Through these experiential learning initiatives, students will be paired with relevant faculty members and their graduate students who will provide mentoring through the process of project development, implementation, and sample and data analysis. Students will also have an opportunity to present their research findings at scientific meetings as posters or oral presentations and, potentially, publish these results in the peer-reviewed literature.

An additional step in our implementation of the new degree program that is critical will be the establishment of an effective internship program that represents a partnership between the student, the university, and the company or agency to provide both experience and education to the students in our program. An internship is a three-way cooperative venture among an employer, the university, and a student. Participating employers gain a high quality, enthusiastic employee and a cost-effective means of recruiting and training potential employees. The students gain real-world experience and the university receives credit for instruction. If matched properly, the internship will benefit all involved parties.

In preparing our program's vital experiential learning component, we evaluated several successful internship programs. The programs studied include the Marine Advanced Education Technology (MATE) Center in California and the UAS Ketchikan program in Fisheries Technology. In addition, we also evaluated the senior thesis research program in the Biology Department at Lake Superior State University, which is funded through the National Science Foundation. These programs provided the underlying ideas for the experiential learning internship component that we have subsequently developed for the curriculum.

2. Service Activities:

The SFOS is committed to growing its partnerships with all components of Alaska's fishing and seafood processing industries and using these strong partnerships to produce an educational program of distinction. Over the past two years, SFOS faculty members have surveyed the Alaskan fishing industry and its regulators to determine how our fisheries program can be broadened to serve a larger sector of Alaska's fishing community. Faculty members in SFOS have visited fishing companies, seafood processors, and industry regulators to gather standardized information about industry needs and potential areas for growth. Our Marine Advisory Program faculty (in Unalaska, Anchorage, Bethel, Sitka, Homer, Cordova, Dillingham, Petersburg, Kodiak, and Ketchikan) has organized meetings to determine the specific needs of Alaska's coastal communities. We have also completed a written survey of 244 individuals and groups involved in Alaska's fishing industry. The information acquired from these meetings, visits, and surveys has been compiled and was used to formulate a new Bachelor of Arts in Fisheries curriculum. In later years, we will conduct follow-up surveys to determine needed modifications to the curriculum.

IX. Implementation/Termination

A. Date of Implementation

This degree program is expected to be available for the fall semester of 2008.

B. Plans for Recruiting Students

A significant effort will be made to recruit Alaska Native and rural Alaskan students into our program. In SFOS, a full-time Recruitment and Retention Coordinator (Katie Murra) was hired in May 2006. Katie's responsibilities include developing and maintaining an enrollment management plan, recruiting potential students at college fairs and through high-school visits, and advising undergraduate students. Further, SFOS Marine Advisory Program faculty have recently completed a study to determine the barriers that have prevented more Alaska Native students from pursuing fisheries academic programs. This report, published in 2006 by Paula Cullenberg and Dolly Garza, was funded by the National Oceanic and Atmospheric Administration (NOAA), an agency committed to providing ocean-related educational opportunities to minorities. The five recommendations, included in report are stated below. It should be noted that all five recommendations have been implemented by SFOS in an attempt to attract more Alaska Native and Rural Alaskan students to the program.

1. Stakeholders, universities and colleges, and employers should work together to support K-12 outreach programs and opportunities which encourage students to consider fisheries or marine science careers.

2. Training programs for fisheries technicians should be available statewide and recognized and encouraged by employers as a means to support recruitment into jobs. A one-year certificate and two-year associate degree program in fisheries/marine sciences should be available statewide. Course work should be offered through a mix of distance education classes, and hands-on lab and field

work and should be linked both to employment as technicians and to related B.S. degrees.

3. The School of Fisheries and Ocean Sciences at UAF should partner with the Alaska Native Science and Engineering Program (ANSEP) and/or other internship/scholarship models which provide pre-college programs, high school to university bridging programs, scholarships, tutoring, mentoring, and internships. Other University of Alaska and college programs that support Alaska Native and rural Alaskan students in science and math should be used by SFOS as recruiting opportunities.

4. Natural resource agencies, Alaska Native organizations, tribal groups, and other potential employers should target Alaska Native and rural Alaskan students by developing paid summer internships, funding scholarships and when possible, mentoring secondary and university students.

5. Outreach and information about opportunities should be developed and shared by all those interested in increasing the number of Alaska Native and rural Alaskan students in fisheries and marine science.

The largest initiative undertaken by SFOS to recruit Alaskan Native and Rural Alaskan students has been with ANSEP. To date, there have been multiple discussions between ANSEP – both with Herb Schroeder at UAA and Dan Solie at UAF – and SFOS personnel on how to best determine how to coordinate our efforts. It has been agreed upon that SFOS will provide partial support to UAA ANSEP to support their pre-college program. In addition, we will provide scholarship funds to ANSEP for fisheries students. Katie Murra has been working with the ANSEP recruiters to encourage students interested in the sciences to consider fisheries as a degree option. By combining our resources with the ANSEP model, we will operate more effectively in recruiting and retaining Alaska Native and rural Alaskan students in this new fisheries curriculum.

To attract the best undergraduates to our program and to provide needed support for students from rural Alaska, we will also provide student scholarships which would continue through all four years of the undergraduate program for successful students. We plan to start this effort with two $6,500 scholarships (the ANSEP standard) the first year and increase this one or two scholarships each year over the next five years.

C. Termination Date

There is no anticipated termination date for this degree program.

D. Plans for Phasing out Program if Unsuccessful

If it becomes necessary to phase out the program, students will be provided with the opportunity to complete the requirements for the Bachelor of Arts in Fisheries.

E. Assessment of the Program.

A key to the success of our Bachelor of Arts in Fisheries degree program will be an understanding of how our graduates are contributing to Alaska's fishing industry. The

assessment process begins while the student is at the university by building a strong relationship between the student and the advisor. As stated above, if it becomes necessary to phase out the program, existing students will be provided with the opportunity to complete the requirements for the Bachelor of Arts in Fisheries. Enrollment below our projected numbers would be grounds for phasing out the program over a four-year period.

Advising students in progress
At UAF, undergraduate students are assigned an advisor at the beginning of their program of study. Communication between the advisor and student is one of the primary methods by which SFOS keeps track of student progress and well-being. Advisors have online access to the campus' Academic Advising Center website which has various sources of general information for advisors. Advisors also have access online through the statewide University of Alaska system to each student's current transcript of courses and grades, to his/her curriculum information, and similar information about the student. Advisors consult with students each semester at a minimum, when each student registers for classes and the advisor approves the courses requested by the student, taking into consideration the progress made by the student toward completion of his or her degree program.

The School keeps lists of students currently enrolled (in the SFOS Academic Manager's office), including personal information, previous schools, identity of advisors, date of admission, etc. The School has incorporated these lists into an online-accessible database (Filemaker). The system includes the incorporation of undergraduate student information into the online-accessible database, including demographic information, biographic information, test scores such as ACT/SAT, a portfolio including writing samples, and evaluations of oral presentations.

As part of this initiative, the Recruitment and Retention Coordinator (Katie Mura) will provide additional interaction with the students while they are enrolled and to maintain a closer connection with students after they graduate. A monthly newsletter will be sent to enrolled students (by electronic mail) to keep them informed of activities of interest.

Monitoring and evaluating alumni
Informal continuing communication between faculty advisors and their former students is a valuable method by which SFOS monitors the success of its graduates. Basic information gathered from these communications, including current address, current job, and professional affiliation is maintained by SFOS (our staff circulates a name and address list once a year asking for updates) and is used to keep the UA statewide database current. The statewide database is maintained in Banner and is used by the alumni association to communicate with alumni.

Each academic program is required by UAF to maintain and execute an Outcomes Assessment Plan and to report on the execution of each plan each year to the Provost. Each academic program, including its history of Outcomes Assessments and its responses to them, is periodically reviewed by an external committee at UAF. The Outcomes Assessment Plan for our B.S. and B.A. in Fisheries degree programs have

as their general goal “to assure that our graduates are adequately prepared to succeed in the job market in their chosen fisheries field or a closely related field, or for advancement to graduate school."

The implementation steps include a synopsis of each student’s grades and scores on entering the program and an assessment of accomplishments (a review of the student’s portfolio) by the Outcomes Assessment Committee at graduation. In addition, we ask each alumnus to complete a questionnaire three years after graduation in which we ask their opinion about the quality of their preparation and their professional successes. As part of this initiative, we will expand this student-based assessment effort to include an employer assessment. We envision contacting employers of our students on a periodic basis to determine if the skill set our student acquired in our degree program provided the employer with the type of employee needed to meet current and future requirements.

X. Regents Guidelines

See attached document.

Appendix 1
Sample Course of Study

Bachelor of Arts in Fisheries

Course #	Title		Credits	Frequency
	Freshman – Fall			
ENGL 111X	Methods of Written Communication		3	every semester
FISH 101	Introduction to Fisheries		3	every fall
LS 100X/101X	Library and Information		1	every semester
BIOL 115X	Fundamentals of Biology I		4	every semester
AIS 101	Effective Personal Computer Use		3	every semester
	Semester Credits		**14**	
	Freshman – Spring			
MSL 111X	The Oceans		4	every semester
ECON 100X	Political Economy	3	every semester	
COMM 141X	Fundamentals of Oral Communication		3	every semester

BIOL 116X	Fundamentals of Biology II	4	every semester
	Humanities/Social Science Elective	3	every semester
	Semester Credits	**17**	
	Sophomore – Fall		
Math 161X	Algebra for Business and Economics	3	every semester
ANTH/SOC 100X	Individual, Society, and Culture	3	every semester
ENGL 211X	Intermediate Exposition	3	every semester
ECON 235	Introduction to Natural Resources Economics	3	every fall
	Minor Requirement	3	every semester
	Semester Credits	**15**	
	Sophomore – Spring		
ART/MUS/THR 200X	Aesthetic Appreciation: Interrelation of Art	3	every semester
FISH 261	Introduction to Fisheries Utilization	3	every spring
FISH 288	Marine & Freshwater Fishes of Alaska	3	every spring
STAT 200X	Elementary Probability and Statistics	3	every semester
	Social Science Elective	3	every semester
	Semester Credits	**15**	
	Junior – Fall		
ENGL 314W, O/2	Technical Writing	3	every fall
ACCT 261	Accounting Concepts and Uses I	3	every semester
BA 307	Introductory Human Resources Management	3	every semester
RD 350O	Rural Development in Global Perspective	3	every fall
	Humanities Elective	3	every semester
	Semester Credits	**15**	
	Junior – Spring		
BA 323X	Business Ethics	3	every semester
ACCT 262	Accounting Concepts and Uses II	3	every semester
BA 343	Principles of Marketing	3	every semester
ANTH 403	Political Anthropology	3	alternate spring
	Humanities/Social Science Elective	3	every semester
	Minor Elective	3	every semester
	Semester Credits	**15**	
	Senior – Fall		
	Fisheries Elective	3	every semester
BA 390	Organizational Theory and Management	3	every semester
ENGL 200X	World Literature	3	every semester
	Humanities Elective	3	every semester
	Minor Elective	4	every semester
	Semester Credits	**15**	
	Senior – Spring		
HIST 100X	Modern World History	3	every semester
FISH 490	Experiential Learning Internship	1	every semester
NRM 407	Environmental Law	3	every spring
	Social Science Elective	3	every semester
	Minor Electives	6	every semester
	Semester Credits	**15**	
	Total Earned Credits	**126**	

Appendix 2

GENERAL CATALOG LAYOUT

1. Complete the general university requirements (page 116).
2. Complete the B.A. degree requirements (page 120).
3. Complete the following fisheries requirements:
   FISH 101--Introduction to Fisheries…….....3
   FISH 261--Introduction to Fisheries Utilization…….3
   FISH 288--Marine and Freshwater Fishes of Alaska…….…….3
   FISH 490--Experiential Learning Internship…….....1
   Upper Division Fisheries Elective……..3
   MSL 111--The Oceans…….....4
   ENG 314 W,O--Technical Writing…….3
   AIS 101--Effective Personal Computer Use…….....3
   BA 307--Introductory Human Resources Management…….3
   BA 343--Principles in Marketing……3
   BA 390--Organizational Theory and Behavior (3)
   or BA 330—The Legal Environment of Business (4)…….….3
   ACCT 261--Accounting Concepts and Uses I.....……3
   ACCT 262--Accounting Concepts and Uses II...……3
   ECON 200--Principles of Economics (4)
   or ECON 235--Introduction to Natural Resources (3)….....3-4

RD 300W Rural Development in a Global Perspective
or RD 350O--Indigenous Knowledge and Community Research
or RD 430 Indigenous Economic Development and Entrepreneurship
……3
NRM 407--Environmental Law (3)
or PS 447--U.S. Environmental Politics (3)
or HIST 411--Environmental History (3).……..... 3
ANTH 403W/O--Political Anthropology
or ANTH 428--Ecological Anthropology and Regional Sustainability..3

4. Complete a minor complex.
5. Complete a minimum of 1 credit of electives....…….……....1
6. Minimum credits required……126

Appendix 3
Fisheries Degree Worksheet

2008-09 DEGREE WORKSHEET
FISHERIES
B.A. Degree Requirements
126 Credits

GENERAL REQUIREMENTS

COMMUNICATION:- (9)
Engl 111X (3)____
Engl 211X or 213X (3)____
Comm 131X or 141X (3)____

PERSPECTIVES ON THE HUMAN CONDITION:- (18-22)
*Complete the 6 courses listed **OR** 4 of those listed plus 2 semester length courses in a single AK Native or other non-English language or 3 semester length courses (9 credits) in American Sign Language*
Anth 100X/Soc 100X (3)____
Econ/PS 100X (3)____
Hist 100X (3)____
Art/Mus/Thr 200X OR
HUM201X OR
ANS 202X (3) ____ OR
Engl/FL 200X (3)____
BA 323 X or Comm 300X or Just 300x or Nrm 303X or
Phil 322X or PS 300X (3)____

**Designates only grades of "C" or better may be used to fulfill this requirement.*

***MAJOR REQUIREMENTS**

1.Complete the following:- (50-52)
Fish 101 (3)____
Fish 261 (3)____
Fish 288 (3)____
Fish 490 (1)____
Upper Division Fisheries Elective (3) ____
MSL 111X (4)____
Engl 314 W, O/2 (3)____
AIS 101 (3)____
BA 307 (3)____
BA 343 (3)____
BA 390 (3)____ or BA 330 (4) ____
Acct 261 (3)____
Acct 262 (3)____
Econ 200 (4)____ OR Econ 235 (3)____

RD 300W (3) _____ OR RD 350O (3) ____ OR RD 430 (3)____
NRM 407 (3)____ OR PS 447 (3)____ OR
HIST 411 (3)____
ANTH 403W/O OR ANTH 428 (3)____

Language option as listed above:
_____( )___ _____( )___ _____( )___

SOCIAL SCIENCES/HUMANITIES:- (18)
Each area must include at least 6 credits. Twelve credits of a non-English language taken at the university level may fulfill the humanities requirement. At least 6 credits must be upper division.
_____( )____ _____( )____
_____( )____ _____( )____
_____( )____ _____( )____
_____( )____ _____( )____
_____( )____ _____( )____

MATHEMATICS:- (6-8)
1. Complete 1 Math//CS/Stat Elective
_____(3-4) :
2. Math 103X (3) or 107X (4) or 161X (3) or STAT 200X (3)____
Or Math 200 or 201 or 202 or 262 or 272 (4)____+
+ no credit may be earned for more than one math 107X or Math 161x

NATURAL SCIENCE: (8)
Complete any two 4-credit Core Natural Science courses
_____(4)____ _____(4)____

LIBRARY & INFO SKILLS:- (0-1)

LS competency test ____ OR
LS 100X or 101X (1)____

MINOR:_____**-(min. 15 credits)**
At least 6 credits must be upper division.
_____( )____ _____( )____
_____( )____ _____( )____
_____( )____ _____( )____

ELECTIVES (for a total of 126 credits):
_____( )____ _____( )____
_____( )____ _____( )____
_____( )____ _____( )____

UPPER DIVISION CREDITS- (39)
Transfer Credits ____
UAF Credits (24)* ____
TOTAL TO DATE: ____

TO BE COMPLETED:
a minimum of 24 UAF credits

COMPLETE 2 DESIGNATED (W) COURSES
AND DESIGNATED (O) COURSE OR 2 COURSES
AT THE UPPER DIVISION DESIGNATED (O/2)
LEVEL:
_____(W) _____(W)

_____(O) OR _____(O/2)_____(O/2)

Credits for core/general requirements: 60-66
Credits required for major: 50-52
Credits required for minor (minimum): 15
Elective credits (minimum): 1
Total credits required for degree: 126

Appendix 4
Workforce Assessment Questionnaire Survey

University of Alaska Fairbanks
School of Fisheries and Ocean Sciences

Undergraduate Fisheries Degree Program Design Survey

August 2006

Undergraduate Fisheries Degree Survey

Well over 50,000 Alaskans are involved in fish and shellfish harvesting, seafood processing, fisheries science and management, and related enterprises. The UAF School of Fisheries and Ocean Sciences serves the people of the state by preparing students for future employment opportunities in these fields. As seafood harvesting and processing, regulation, management and global businesses change, UAF needs your help in evolving education programs which support Alaska's fishing and seafood sector.

Part One: Current Workforce

Please tell us who you are, what jobs in your organization are related to fisheries and seafood, and what degrees, certificates and training are necessary for your employees.

1. What is your overall business, organization or service involvement related to fisheries & seafood?

CDQ group	
Seafood transportation	
Seafood sales	
Seafood processing	
Tribal group	
Management agency	
Hatchery	
Fisheries law	
Financial advisor	
Banking	
Consulting	
Observer company	
NGO/policy research	
Fishing association	
Fisherman	
Other	

2. Estimate the number of persons in your company/organization holding positions related to fisheries and seafood:

	0 to 5	**5 to 10**	**10 to 20**	**> 20**
Accountant				
Bookkeeper				
Operations manager				

Sales				
Marketing				
Biological research				
Socio-economic research				
Economist				
QA/QC				
Processing labor				
Floor manager				
Communications/PR				
Logistics				
Law				
Harvester				
Deckhand				
Policy development				
Regulator				
Enforcement				
Banking/Loan officer				
Fisheries management				
Company management				
Fish culturalist				
Fisheries biologist				
Fisheries biometrician				
Marine engine mechanic				
Health/science officers				
Captain/mate				
Navigation/electronics specialist				
Refrigeration technician				
Fisheries field research technician				
Observer				
Other				

3. What degrees, certificates or training is currently required in these positions?

	High School/GED	Associate degree	B.S in Fisheries	Other 4 year degree	Graduate degree	Professional certificate	Vocational certificate	On-the-job training
Accountant								
Bookkeeper								
Operations manager								
Sales								
Marketing								
Biological research								
Socio-economic research								
Economist								
QA/QC								
Processing labor								
Floor manager								
Communications/PR								
Logistics								
Law								
Harvester								
Deckhand								
Policy development								
Regulator								
Enforcement								
Banking/loan officer								
Fisheries management								
Company management								
Fish culturalist								
Fisheries biologist								
Fisheries biometrician								
Marine engine mechanic								
Health/Science officer								

	High School/GED	Associate degree	B.S in Fisheries	Other 4 year degree	Graduate degree	Professional certificate	Vocational certificate	On-the-job training
Captain/mate								
Navigation/electronic specialist								
Refrigeration technician								
Fisheries field research technician								
Observer								
Other								

4. In the next 5 to 20 years, what are the top 3 new job areas and/or new job skills you see in your sector of the industry? Please list and describe.

5. What kinds of education or training will be needed for these positions?

Part Two: New B.A. Fisheries Degree at UAF

UAF's undergraduate Bachelor of Science (B.S.) in Fisheries degree teaches students basic scientific principles involved in conservation and sustainability of fisheries resources. The B.S. degree prepares students for scientific research, fisheries management positions and related graduate level studies.

Based on feedback from the fishing/seafood industry, UAF School of Fisheries and Ocean Sciences is considering development of an additional undergraduate Bachelor of Arts (B.A.) degree with the goal of producing graduates with broader understanding of both the fishing/seafood industry and how it is managed. After finishing the first two years of a degree program, available at any UA site, a student in this B.A. degree program would complete their degree at either Fairbanks or Juneau. The B.A. would include:

- courses in basic fisheries biology/ecology and fisheries management,
- courses which emphasize fisheries/seafood business, economics, marine policy and sociology/anthropology, and,
- an industry internship and/or independent study component

6. Based on this general outline, do you think this degree would serve future needs of the Alaska fishing/seafood industry? Yes, No? Comments

7. Do you think there would be demand for employees with this broader fisheries degree among industry employers? Yes, No? Comments

8. Are there other undergraduate level courses you think should be included in this degree?

Part Three: Undergraduate Fisheries Internships

Hands-on training in the fishing/seafood industry is very important, and internships are one way to offer students a “real-life” opportunity.

9. Has your company/organization supported any college student internships in the last three years? Yes, No, Not sure

10. If so, describe how you’ve used college interns in the past.

11. Would your organization be willing to support a college-level B.A. or B.S. fisheries intern in the future?

_____

12. Is there anything else you believe is important for us to consider in developing this degree program?

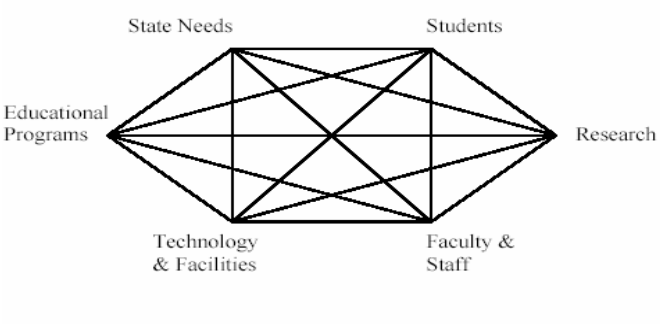
To ensure we are gathering information from throughout the fishing/seafood industry, please include your name. All survey answers are confidential and will be reported in summary form; no results will be associated with your name. If you would like a copy of the survey results, include your contact information, and we will notify you by e-mail when final data are available.

Name: _____e-mail:_____

Thank you very much for your time. We are very excited about this important initiative. Please don’t hesitate to contact me further.

Regards,
Dr. Denis Wiesenburg, Dean
School of Fisheries and Ocean Sciences
University of Alaska Fairbanks

University of Alaska Board of Regents



Program Approval Summary Form
Requirements:

MAU: UAF
Title: Bachelor of Arts in Fisheries
Target admission date: Fall 2008

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

Over the past two years, SFOS faculty members have surveyed the Alaskan fishing industry and its regulators to determine how our fisheries program can be broadened to serve a larger sector of Alaska's fishing community. Faculty members in SFOS have visited fishing companies, seafood processors, and industry regulators to gather standardized information about industry needs and potential areas for growth. Our Marine Advisory Program faculty has organized meetings to determine the specific needs of Alaska's coastal communities. We have also completed a written survey of 244 individuals and groups involved in Alaska's fishing industry.

To date, there has been no formalized degree program that has been formulated to address the needs of a liberal arts degree in fisheries. As a result, fisheries industry professionals in Alaska have had a primarily science degree out of a Bachelors of Science program or have a primarily business, political science, social science, or anthropology degree out of a Bachelor of Arts program. Our proposed degree melds those two programs so that students receive both an adequate foundation in the sciences and a broad background in business and political science/policy.

The creation of a Bachelor of Arts in Fisheries does have the potential of impacting student enrollment in other degree programs with the UA system, particularly at UAF. We do not necessarily anticipate drawing students from other programs. Instead, we anticipate an increase in student enrollment which would have the positive benefit of increasing credit-hour production in fisheries courses as well as courses in degree programs intricately involved in this program (e,g., Business Administration, Political Science). It should be mentioned that this degree program does have the support of Interim Dean of the School of Management and the Department Head of Political Science.

What **State Needs** are met by this program.

Alaska's fisheries are entering a period of rapid change. Climate change influences the abundance and dynamics of fish stocks. Institutional changes continue to alter the structure and function of industry by promoting the emergence of industrial firms and Alaska Native organizations as dominant sectors in the fishing industry. Legal protections for threatened and endangered species and essential habitats and the development of new ecosystem-based management plans are continuously changing Alaska's fisheries.

The fisheries curriculum offered by the University of Alaska Fairbanks through the School of Fisheries and Ocean Sciences must meet the challenges of these changes. The health of Alaska's biologically and ecologically sustainable fisheries, the growth and development of Alaska's economy, and the persistence of traditional subsistence communities require that we train and educate scientists and managers with the knowledge and experience to confront these challenges.

What are the **Student** opportunities and outcomes? Enrollment projections?

The proposed Bachelor of Arts on Fisheries degree program will offer enrolled undergraduates the unique ability to combine business administration, finance, accounting, marketing, organizational management, policy development, and rural community development skills with their technical knowledge of fisheries management issues within the context of the Alaskan fishing and seafood industries. Undergraduates that completed the Bachelor of Arts in Fisheries degree program would be competitive for a wide variety of agency and organization positions, particularly within the state of Alaska. Areas of focus would include business administration, policy development, fisheries education and outreach specialists, or social scientists.

The undergraduate enrollment in Fisheries is expected to increase to 50 students in the Academic Year (AY) 2009. As the program evolves and grows, it is anticipated that the combined student enrollment in the B.S. and B.A. in fisheries programs will increase to 100 in AY 2012. In addition, it is anticipated that the Alaska Native and rural

Alaskan student enrollment will increase from its present level over the past five years (1 to 5 students) to 10 to 15 students in AY 2009. Based on this anticipated increase in enrollment, the number of graduates each year is expected to increase from 2 (current average) to 6 student per year in AY 2009, 20 per year in AY 2012, and then stabilize at 20 graduates per year for program years 5 to 20.

Describe **Research** opportunities:

Through internship experiences, students will be able to develop independent study and senior thesis research projects. Through these experiential learning initiatives, students will be paired with relevant faculty members and their graduate students who will provide mentoring through the process of project development, implementation, and sample and data analysis. Students will also have an opportunity to present their research findings at scientific meetings as posters or oral presentations and, potentially, publish these results in the peer-reviewed literature.

An additional step in our implementation of the new degree program that is critical will be the establishment of an effective internship program that represents a partnership between the student, the university, and the company or agency to provide both experience and education to the students in our program. An internship is a three-way cooperative venture among an employer, the university, and a student. Participating employers gain a high quality, enthusiastic employee and a cost-effective means of recruiting and training potential employees. The students gain real-world experience and the university receives credit for instruction. If matched properly, the internship is a win-win-win proposition.

Describe Fiscal Plan for development and implementation:

The SFOS has received a $5 million grant from the Rasmuson Foundation with a $5 million match from UA Statewide. These funds will be used over the next six (6) years to hire new faculty, renovate teaching classrooms and laboratories, purchase field and laboratory equipment, recruit and retain students through scholarships and other initiatives, and meet other teaching needs associated with the delivery of the fisheries program.

A total of $500,000 has been allocated by UAF to SFOS to develop and refurbish teaching classrooms and laboratories. To date, both classrooms in the O'Neill Building (rooms 201 and 214) have been completed. Room 214 has been outfitted with video conference equipment and is a functional teaching room that can hold up to 20 students. Room 201 will be outfitted with its video conference equipment by the end of 2007. This room can hold up to 50 students and will also serve in the capacity as a model "Smart" classroom. Offices for three of the new fisheries faculty in O'Neill Building have been completed and two of these offices are currently occupied. A five-room laboratory complex in the Arctic Health Research Building is slated to be refurbished during winter and spring of 2008 and available for use for the fall 2008 semester. The Lena Point facility, which houses SFOS faculty, staff, and students in Juneau, will be completed in fall 2008. This facility will have a number of teaching classrooms and laboratories, and teaching rooms will be outfitted with video-conference equipment. Finally, SFOS teaching facilities in Seward and Kodiak will also be outfitted with video-conference equipment for distance delivery.

Five new faculty members in Fisheries will be hired in SFOS prior to the start of the fall 2008 semester. In addition, two faculty members (Amanda Rosenberger and Trent Sutton) have already been hired in Fisheries in support of this program. Further, there will be three additional hires in Oceanography and these positions will serve to interface the Fisheries and Ocean Observing programs. One of our new faculty members (Trent Sutton) has been designated as the Undergraduate Fisheries Coordinator with the responsibility for overseeing the development and maintenance of this program. In several years, a distinguished visiting professor will be brought in to Fairbanks or Juneau to interact with our faculty and students to broaden the program.

In order to make this degree program accessible at other UAF facilities, UA campuses, and rural communities, distance-learning equipment has been or will be upgraded at all SFOS locations to allow faculty at any location to deliver instruction at any other location. A new high-definition distance learning system will be used to assure the best quality communication. Desktop computers will also be purchased for students at UAF campuses in Fairbanks and Juneau so that they have access to the computational capabilities needed for some of the classes. Instructional field and laboratory equipment will be upgraded to assure that students have access to the top-of-the-line equipment available at other institutions. Funds to cover these costs have been provided by the Rasmuson Foundation.

RESOURCE COMMITMENT TO THE PROPOSED DEGREE PROGRAM

Bachelor of Arts in Fisheries

Resources	Existing	New		Total
	College/School	College/School *	Others (Specify)	
Regular Faculty (FTE's & dollars)	12 $1,474,000	4 $2,176,444		16 $3,650,444
Adjunct Faculty (FTE's & dollars)	2 $25,004			2 $25,004
Teaching Assistants (Headcount)	4	4		8
Instructional Facilities (in dollars and/or sq. footage)	$500,000 1310 sq. ft.		$26.5 million under construction Lena Point	$27 million
Office Space (Sq. footage)	700	300	3,092 (201 O'Neill Bldg.)	4,092
Lab Space (Sq. Footage)	2,250		2,920 (AHRB)	5,170
Computer & Networking (in dollars)		$570,000		$570,000
Research/ Instructional/ office Equipment (in dollars)		$560,000		$560,000
Support Staff (FTE's & dollars)		3 $1,256,309		3 $1,256,309
Supplies (in dollars)		$90,000		$90,000
Travel (in dollars)		$220,000		$220,000

Signature_____ ____10/4/2007_

Dean of College/School Proposing New Degree Program Date

* Rasmuson Foundation funding and UAF match over 5 years (funding began Jan. 1, 2007).

Student Learning Outcomes Assessment Plan

Date: October 2007

Certificate or Degree Program: Bachelor of Arts in Fisheries

Mission: The Fisheries Division of the School of Fisheries and Ocean Sciences is committed to the mutual enhancement of teaching, research, and public service. The teaching mission and research activity of the SFOS Fisheries Division provide new knowledge, stimulate inquiry, and instill learning skills for students enrolled in this unique degree program.

Goal: To provide students with the knowledge base, skill sets, and hands-on experience to be highly competitive in obtaining positions within the fishing and seafood processing industries in Alaska.

INTENDED OUTCOMES/ OBJECTIVES	ASSESSMENT CRITERIA	IMPLEMENTATION PROCEDURES (what, when, who)
Have an understanding of the biology of fishes and other aquatic organisms. An emphasis should be placed on the functional role of these organisms in terrestrial and aquatic ecosystems.	Establish a measure of the student's general fisheries knowledge.	Conduct a written entry and exit survey of knowledge; implemented by the Undergraduate Fisheries Coordinator every fall.
Have an understanding of how business administration, economics, finance, organizational management, and policy dictate the decision-making process associated with fisheries management.	Establish a measure of the student's general business knowledge.	Conduct a written entry and exit survey of knowledge; implemented by the Undergraduate Fisheries Coordinator every fall.
Have the ability to critically review and evaluate field and laboratory data and make appropriate conclusions about the use of this information that allows for science- and business-based decision making.	Establish a measure of the student's ability to think critically and synthesize knowledge to describe, analyze and solve complex fisheries business and management problems.	Construct a student portfolio of term papers and major projects; implemented by the Undergraduate Advisors for each student every fall
Have an understanding of and appreciation for the influence of human wants and desires on the conservation and management of fisheries and aquatic organism resources, including social, political, economic, and legal aspects of natural resource conservation.	Surveys of graduates each year and alumni every two years.	Develop an annual student exit survey to be implemented by the Recruitment and Retention Coordinator starting in fall 2012; develop an alumni survey to be implemented by the Recruitment and Retention Coordinator starting in fall 2014.
Have an understanding of our diverse world and how humans and natural resources are interconnected with other parts of Alaska, North America, the biosphere, and all peoples inhabiting those areas.	Appropriate and diverse course offerings; appropriate questions included in senior exit survey	Courses available to provide the necessary information and skill sets and to allow the sufficient development of critical thinking skills in fall 2008 and to be implemented by course instructors; all faculty teach and conduct research in the area starting in fall 2008; develop an annual student exit survey to be implemented by the Recruitment and Retention Coordinator starting in fall 2012
Have an understanding of social responsibility, the ethical use of natural resources, and our obligations as stewards of the planet.	Appropriate and diverse course offerings; appropriate questions included in senior exit survey	Courses available to provide the necessary information and skill sets and to allow the sufficient development of critical thinking skills in fall 2008 and to be implemented by course instructors; all faculty teach and conduct research in the area starting in fall 2008; develop an annual student exit survey to be implemented by the Recruitment and Retention

		Coordinator starting in fall 2012
Have an understanding that humans have a right and responsibility to evaluate and embrace change by critically reviewing the effects of information and technology as they relate to natural resources and the world.	Appropriate and diverse course offerings; appropriate questions included in senior exit survey	Courses available to provide the necessary information and skill sets and to allow the sufficient development of critical thinking skills in fall 2008 and to be implemented by course instructors; all faculty teach and conduct research in the area starting in fall 2008; develop an annual student exit survey to be implemented by the Recruitment and Retention Coordinator starting in fall 2012
Have the ability to effectively communicate with other professionals and laypersons using written, oral, listening, and technological skills.	Graded writing assignments in all fisheries courses; graded research projects/papers in all upper division fisheries courses; graded Internship research paper; bound collection of Internship research papers kept on file in department; appropriate questions included in senior exit survey each year	Presentation of contending positions, theories, and arguments intrinsic part of all fisheries courses; standards of written and oral argumentation stressed in all courses; students take 2W and 1O course; implementation begins in fall 2008 by course instructors and academic advisors
Have the ability to effectively work in situations that require teaming and leadership skills.	Collect feedback from supervisors of student interns, and public comment from student-organized activities; graded course requirements (research papers, journals, etc.) for internships; alumni surveys every two years	Experiential Learning Coordinator collects information annually; course instructors collect information and provide to the advisors of the students; develop an alumni survey to be implemented by the Recruitment and Retention Coordinator starting in fall 2014.
Have an appreciation for and understanding of the need for lifelong learning and developing professional skills.	Surveys of graduates each year and alumni every two years.	Develop an annual student exit survey to be implemented by the Recruitment and Retention Coordinator starting in fall 2012; develop an alumni survey to be implemented by the Recruitment and Retention Coordinator starting in fall 2014.