Charting a New Course for Fisheries Undergraduates in Alaska

A proposal from the

University of Alaska Fairbanks
School of Fisheries and Ocean Sciences

to the

Rasmuson Foundation

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UNIVERSITY OF ALASKA FAIRBANKS

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University of Alaska Fairbanks
School of Fisheries and Ocean Sciences (SFOS)

1. Preface

The effort to produce an outstanding undergraduate program to educate Alaskans in Alaska to manage Alaska's fisheries began with a meeting between Ed Rasmuson and incoming SFOS Dean Denis Wiesenburg on May 20, 2004. At that meeting, Mr. Rasmuson pointed out that the University of Alaska Fairbanks (UAF) fisheries undergraduate degree program needed to be stronger to serve Alaskans properly. At a subsequent meeting on December 17, 2004, UAF Vice Chancellor Jake Poole and Dean Wiesenburg described to Mr. Rasmuson their evaluation of what was needed to produce an outstanding fisheries program at UAF and the resources required to move the UAF program to national prominence: $2,000,000 per year. At that meeting Mr. Rasmuson indicated that the Rasmuson Foundation might provide $1,000,000 per year for five years if the university could provide an equivalent amount of matching funds.

Since that December day, the faculty of the UAF School of Fisheries and Ocean Sciences has been developing a new curriculum to meet state demands. The University of Alaska has guaranteed the matching funds and is requesting a full $1,000,000 in matching funds from the 2007 Alaska Legislature. The Rasmuson Foundation has established a Fisheries Excellence Committee and hired Dr. Andy Rosenberg as a consultant to help UAF formulate a program that is innovative, appealing to a broad spectrum of students, and able to meet the needs of Alaska's fishing industry. UAF faculty members throughout the state have met with fishing industry representatives (fishermen, processors, regulators, and academics) to improve the plan and to establish relationships that support the program. At a July 6, 2006 meeting at the Rasmuson Foundation it was generally agreed that the program proposed would meet the mutual expectations of the university and the Rasmuson Foundation.

In a follow-up letter to Dean Wiesenburg on July 26, 2006, Ms. Diane Kaplan, President Rasmuson Foundation President, provided suggestions to strengthen the program and proposal (Appendix A). This proposal has been improved by including information responsive to the eight suggestions in the July 26 letter. Further modifications have been made following a November 3 teleconference. The University of Alaska Fairbanks is submitting this proposal requesting $1,000,000 per year for five years from the Rasmuson Foundation. We are already moving forward and we urge the Rasmuson Foundation to join us now this endeavor. In Alaska, only SFOS can do this, and we need your help.

2. Overview

Vision: *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.

Recognizing that Alaska's resources and its fishing and seafood industries are some of the healthiest in the world and that both our geographic size and professional opportunities are vast and diverse, the UAF School of Fisheries and Ocean Sciences proposes to lift all of its programs, through teaching, service and research, to a new level of excellence. This elevation will be driven by enhancement of its academic programs, which include undergraduate and graduate degrees.

We propose a major new development, an undergraduate curriculum designed to broadly prepare students for participation in the fishing industry and community, a new Bachelor of Arts (B.A.) degree in fisheries. Our present B.S. in fisheries, which prepares students for careers in fishery harvest management and research, will be revised and strengthened by this process and we expect our vibrant M.S and Ph.D. degree programs to be commensurately strengthened as well.

This new B.A. degree program will be characterized by experiential learning, classes from several academic disciplines, broad geographic availability to students from across Alaska, and partnerships with government agencies, fishing and seafood industry representatives and other related groups. This new Bachelor of Arts and the elevation of our existing Bachelor of Science will be based on the following principles:

- **Experiential learning**
  - hands-on field experiences in formal courses
  - internship experience (required)
  - undergraduate research opportunities
  - capstone course or project (under discussion)

- **Multidisciplinary classes**
  - fisheries management
  - fisheries economics
  - the seafood business
  - subsistence in Alaska
  - traditional and ecological knowledge
  - fishing dependent community social science
  - Alaska's fishing industry
  - ecosystem-based fisheries management

- **Broad geographic availability for all Alaskans**
  - distance delivered courses
  - first two years at any UA site (3 MAUs as well as rural campuses)
  - linking other programs, including a certificate, Associate of Arts, or other programs when possible with the undergraduate degree
  - minor in fisheries available to other degree majors
  - partnership with the Alaska Native Science and Engineering Program (ANSEP) to support rural and Alaska Native students

- **Partnerships with public agencies, the fishing and seafood industry, non-profit organizations, non-governmental organizations, and other related groups**
    - scholarships
    - internship opportunities
    - classes developed in response to projected employment needs
    - classes with speakers drawn from the seafood industry and regulatory agencies

The new B.A. degree in fisheries will be developed by the UAF fisheries faculty over the next year with a goal of having the new degree offered beginning in the fall 2008 semester. To establish a new degree, the degree program plan must be prepared and approved by the faculty, recommended by the SFOS Curriculum Committee, approved by the Dean, approved by the UAF Faculty Senate, the UAF Provost and Chancellor, and by the University of Alaska Board of Regents. The Board of Regents form showing the information required for new degrees is provided in Appendix B.

Our existing degree programs, the B.S., M.S. and Ph.D. in Fisheries, are undergoing a periodic review and revision during Academic Year 2007 as prescribed every five years by UAF. Our B.S. in Fisheries program, in particular, will be enhanced by the development of the new B.A. curriculum; the two degree programs will share faculty and courses and will efficiently use the teaching resources of the School.

With the enhancement of our Bachelor's programs, our faculty will be able to offer students in other UAF colleges and schools a minor in Fisheries, increasing and broadening the options for students preparing themselves for participation in Alaska's fishing industry through majors outside of Fisheries. Our approach to accomplishing this vision, along with other determinants in our success, is provided in this brief planning document. This document does not provide complete details of all our planned efforts which are being formalized as the initiative progresses

3. Approach

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

The uniqueness of Alaska's fisheries provides distinct opportunities not available anywhere else. Students studying fisheries in Alaska will work with robust stocks, healthy ecosystems, effective management, and a highly diverse community of users and harvesters. UAF fisheries students will have direct experience with public agencies that play a vital role in fisheries science and management, a vibrant fishing industry, and non-governmental organizations (NGOs) with a strong interest in a sustainable fishery. In developing curricula to meet the challenges of changing times, SFOS faculty can take advantage of the unique opportunities available in fisheries science and management in Alaska.

Alaska's vision of sustainable development of its fishery resources requires that we offer a broader 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.

SFOS is committed to growing its partnerships with all components of Alaska's fishing industry and using those strong partnerships to produce an educational program of distinction. Over the last three years, SFOS faculty members have surveyed the Alaska fishing industry and its regulators to determine how our fisheries programs can be broadened to serve a larger sector of Alaska's fishing community. SFOS faculty members have been visiting 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) will organize meetings to determine the specific needs of Alaska's coastal communities.

To assure we were moving in the right direction with this initiative, and with encouragement from the Fisheries Excellence Committee, we formulated plans to conduct a broad-based survey of the fishing industry. Alaska Sea Grant, a unit within SFOS, conducted a similar survey of 1000 Alaskans while formulating their strategic plan this year. Their assistance in the survey process has been beneficial. Additionally, we have sought input from the University of Alaska Anchorage Institute for Social and Economic Research (ISER) on how to structure the survey document to be most effective. In September and October 2006, SFOS faculty members Torie Baker (Cordova) and Paula Cullenberg (Anchorage) conducted a survey that was sent to 244 individuals and groups involved in Alaska's fishing industry. In addition, Dean Wiesenburg described the new initiative at the October 11, 2006 meeting of the Board of the United Fishermen of Alaska in Anchorage and gave each member a copy of the survey. The survey could be completed either by returning a printed survey or by completing the survey on the web. The survey was completed by 56 respondents as of November 4, 2006. The survey form and current results are shown in Appendix C.

The respondents to the survey showed strong support for this initiative. 89% of the respondents felt the B.A. degree would serve future needs of the Alaska fishing and seafood industry and 82% of the respondents thought there would be a demand for employees with this broader fisheries degree. As internships are part of our plan, it is significant that 68% of respondents indicated their organization would be willing to support a fisheries intern.

The information acquired from these meetings, visits and surveys will be further analyzed and used to formulate a new curriculum. In later years, we will conduct follow up surveys to determine needed modifications to the curriculum. We will seek additional public input by communicating directly with individual high schools in Alaska to assess student interest in this new program. In addition, we anticipate continued involvement of the Rasmuson Fisheries Excellence Committee in critiquing our progress and making recommendations for improvements or for mid-course modifications as this initiative moves forward. We anticipate having the Fisheries Excellence Committee meet about every six months to provide advice, possibly in conjunction with an Anchorage meeting of the North Pacific Fishery Management Council. The budget attached includes funds to cover the cost of these meetings, including travel expenses for participants who do not reside in Anchorage.

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. The two curricula would share some coursework. 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 coursework requirements in one of several potential concentrations, including basic Fisheries Biology, Fisheries Business Management (Fisheries, Harvesting, and Processing), Fisheries Food Science, Marine Policy or others.

An essential component of the new degree program is the integration of internship experience into the curriculum. Successful applicants to this program will work as interns with SFOS partners, including private industry firms, public agencies, and non-governmental organizations. For an expanded list of current and potential internship partners, see Appendix D. 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 3 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 would include:

- Accounting
- Accounting, Applied
- AK Native Languages
- AK Native Studies
- Anthropology
- Arctic Skills
- Asian Studies
- Biochemistry
- Biological Sciences
- Business Administration
- Business Applied
- Chemistry
- Communication
- Computer Information Systems
- Computer Science
- Economics
- Environmental Politics
- Eskimo
- Foreign Language
- General Education
- Geography
- Geology
- History
- Journalism/Broadcasting
- Justice
- Law and Society
- Mathematics
- Natural Resource Management
- Northern Studies
- Paralegal Studies
- Physics
- Political Science
- Rural Development

- Russian Studies
- Sociology
- Statistics
- Wildlife Biology

A recent survey by SFOS faculty of all UAF academic programs revealed that the minors listed above are presently offered at UAF and are appropriate for fisheries students. We will work with other UAF and University of Alaska Southeast (UAS) departments to determine where additional minors could be developed that would be of interest to fisheries students. SFOS is also involved in a current partnership with the UAF School of Education to develop a Center for Ocean Science Education Excellence (COSEE) for Alaska. This partnership could lead to further collaborations and a minor developed in Education if it is determined to be valuable to our fisheries students.

Our vision includes the development of a Minor in Fisheries (minimum of 15 credits) that would be available to students majoring in other areas. Courses available for the minor would include most of our undergraduate courses including courses such as:

- Fisheries science
- Fisheries management
- Seafood marketing
- Fisheries economics
- Marine and freshwater fishes of Alaska
- Introduction to seafood science and nutrition
- Introduction to aquaculture
- Renewable resource management

A list of new courses that will be considered for development is given in Appendix E. A complete list of current UAF undergraduate fisheries courses is given in Appendix F.

The steps in the development of this new degree program include:

1. Developing new curricula at the bachelor's level

2. Expanding faculty and increasing the involvement of current faculty

3. Recruiting and retaining students, particularly rural Alaskans and Alaska Natives

4. Renewing and developing infrastructure and physical facilities

5. Connecting oceanography and fisheries through ocean observing

The outline of our plan to do this is given below. As this is primarily a curriculum development effort, faculty throughout SFOS (fisheries and oceanography faculty) will be engaged over the next year in the program's development. We will:

1. **Develop and enhance curricula**

    A. B.A. and B.S. in Fisheries. Refurbish catalog courses, develop new offerings, and expand delivery methods. Incorporate experiential learning as an essential component of degree (internships, field courses, opportunities for field and laboratory research).

    B. Develop and offer Minor in Fisheries to B.A./B.S. students in Economics, Business Administration (including Finance, Management, and Marketing Concentrations), Rural Development, Political Science, and others.

    C. Organize an effective internship program based on current and potential SFOS partnerships with private industry, public agencies, and NGOs.

2. **Expand faculty and increase engagement and involvement of current faculty**

    A. Increase faculty involvement in undergraduate instruction (as well as graduate instruction and research). Implement the Two + Two plan as previously presented.

    B. Broaden faculty expertise through the recruitment of new faculty.

3. **Recruit and retain students, especially Alaska Native and rural Alaskan students**

    A. Appoint a Recruiting and Retention Coordinator to execute our Recruitment Plan.

    B. Appoint a counselor and execute our Counseling Plan (e.g. ANSEP). See Appendix G for signed letter from ANSEP Executive Director Herb Schroeder to SFOS Dean Wiesenburg.

    C. Improve faculty advising and mentorship activities.

4. **Renew and develop infrastructure and physical facilities**

    A. Develop high-technology classrooms in Fairbanks to complement the new facility being constructed in Juneau.

    B. Upgrade distance learning facilities to high definition in all SFOS locations to provide opportunities for faculty at any location to deliver courses effectively.

    C. Upgrade facilities, furnishings, technology and infrastructure for new faculty.

    D. Provide necessary equipment for new faculty for teaching and research.

5. **Link oceanography and fisheries through ocean observing**

    A. Broaden faculty expertise in ocean observing.

B. Integrate oceanography and fisheries education and research.

The close relationship between oceanography and fisheries at the School of Fisheries and Ocean Sciences will be an important asset in the development of our new curriculum. While most of this initiative is on fisheries and the fisheries undergraduate program, we will also build upon our strengths in oceanography and ocean observing to form an even stronger connection between oceanography and fisheries. As resource management in Alaska and elsewhere relies more and more on broader, ecosystem-based science that incorporates multiple disciplines, our students will receive a broad education that will include an understanding of oceanography and the ecosystem that supports a fishery. As Dr. Rosenberg pointed out to us, our School's unique organization allows us to build upon this important connection and thus elevate the entire school to a higher level within the academic community.

Our oceanography faculty are some of the most productive at UAF. During the last academic year, our oceanography faculty received ten national or international awards and served in 169 different service positions. Of the 1208 publications produced by these outstanding faculty, 423 have been cited in scientific papers more than twelve (12) times indicating that oceanographers around the world depend on the scientific knowledge of our faculty. As the field of oceanography has evolved, our faculty have become more involved with data collection through remote ocean observations.

Construction of an ocean observing system was one of the main recommendations of the U.S. Commission on Ocean Policy. An Integrated Ocean Observing System (IOOS) was recommended to meet national needs for:

- Detecting and forecasting oceanic components of climate variability
- Facilitating safe and efficient marine operations
- Ensuring national security
- Managing resources for sustainable use
- Preserving and restoring healthy marine ecosystems
- Mitigating natural hazards
- Ensuring public health

With its large expanse of ocean area, it is anticipated that 30% of the U.S. portion of the ocean observing system will be built in Alaska waters, including the Gulf of Alaska, Bering Sea and Arctic Ocean. SFOS faculty have a leadership role in the Alaska Ocean Observing System (AOOS) and we will continue to expand our activities in this area as funding for the IOOS evolves through the federal appropriation process. The National Oceanic and Atmospheric Administration (NOAA) is the lead federal agency for IOOS.

The linkage between ocean observations and fisheries is especially important in Alaska waters, particularly in the Bering Sea. Recent, significant ecosystem changes in the Bering Sea have focused the attention of both the scientific community and federal regulators on this area and its important fishery. Many studies have revealed changes in abundance and distribution of marine mammals and other species. Although the Bering Sea fishery is of vital importance in Alaska, we still lack regularly gathered

oceanographic data on the Bering Sea. It is essential that we understand how temperature and ice changes in the Bering Sea affect the prey base of fish, mammals and birds. For example, what is the effect of changes in benthic species composition on higher trophic levels? As part of this initiative, additional oceanography faculty will be employed to pursue these and other questions with external funding and to interact with our fisheries faculty and students to better understand the connections between the fishery and changing ocean processes.

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. Additional information on internships has been solicited from the members of the Rasmuson Fisheries Excellence Committee and will be included as it is provided.

In preparing our program's vital experiential learning component, we have evaluated several successful internship programs. The programs studied include the Marine Advanced Education Technology (MATE) Center in California (www.marinetech.org/partnering) and the UAS Ketchikan program in Fisheries Technology (http://www.ketch.alaska.edu/departments/fisheries/). Our recent (August 25, 2006) meeting with Kate Sullivan, Assistant Professor of Fisheries Technology at UAS Ketchikan, provided valuable insights into how to formulate a successful fisheries internship program. Her program also provides a useful list of agencies and companies that now provide internships to UAS Fisheries Technology students (http://www.ketch.alaska.edu/departments/fisheries/documents/UASInternshipGuide2006.pdf).

An important initial step in our implementation of the new degree program 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.

In the past six months, Dean Wiesenburg has met with representatives of Alaska Native organizations, CDQ groups, and seafood processors to discuss internships. These meetings have been held in Anchorage, Dillingham, Petersburg, Ketchikan, and Seattle. The interest and enthusiasm of each organization was impressive. In the interim since the July 6 meeting at the Rasmuson Foundation, we have not completed memoranda of agreement (MOA) with these entities, however, we will consider establishing MOAs for

internships where needed. UAS Ketchikan has found that establishing relationships with "consulting employers" who define a single point of contact for the internships has been most effective. Establishing this type of relationship allows a company to hire an intern as a regular temporary employee (a requirement of UA internships) and to sign a joint Internship Contract Proposal for each individual. The Internship Contract Proposal is signed by the student, by the organization sponsor, and by the UA faculty sponsor. We will explore with each organization the means they wish to use to establish a cooperative internship with our fisheries program. A sample UAS Internship Contract Proposal Form is included in the appendix on internships (Appendix D).

4. Importance of Student Research in Fisheries Education

Hands-on research provides undergraduate students with an opportunity to enrich their educational experience and accelerate their development as young professionals. Direct experience with the practice of science goes beyond what can be offered in lecture and laboratory-based course work, and includes an opportunity to directly interact with faculty, post-doctoral researchers, graduate students, and fellow undergraduates. Undergraduate research allows students to learn about the culture of academic inquiry within the context of the scientific method, and exposes students to the continuum of basic and applied science.

Employers value research because it demonstrates the ability of a student to design and complete a project that requires the development of analytical, critical thinking, and oral and written communication skills. Graduate schools view undergraduate research experiences as a head start on utilizing and honing the skills that are needed to successfully complete a master's thesis or doctoral dissertation. Undergraduate research opportunities will also provide students with the chance to present their study results at scientific conferences and publish their research in peer-reviewed journals. In some cases, students may also develop and communicate popular literature from their study results and inform user groups through extension and outreach activities and publications.

These scholarly activities not only contribute to the professional development of the student, but they also make the individual more competitive for available employment and graduate school positions. Undergraduate students frequently develop long-term professional relationships with their mentors, which enhances professional interactions, facilitates networking activities, and promotes future collaboration in research and related endeavors. In summary, providing a forum for undergraduate research enhances not only the educational environment, but also promotes the development of a learner-centered environment that is mutually beneficial for both the student and mentor.

While there are a multitude of ways in which to integrate undergraduate research into science-based curricula, one approach that has been met with much success involves engaging students across the entire curriculum. In this model, a common seminar time is established during both academic-year semesters in which all students meet each week. During the initial meeting period, an overall orientation to the undergraduate research program is provided and multiple focal research clusters (e.g., fisheries stock assessment, food-web dynamics, fish culture, etc.) are identified that are led by a research team

consisting of one or more faculty members and their post-docs and graduate students. Based on the identified areas, undergraduate students choose which research cluster to participate in based on their interests. In subsequent meetings, students are subdivided into smaller break-out groups in which they participate in various weekly activities. For example, freshmen meet with research group mentors, including seniors that are completing their project, to learn about the research process and to see the end products (e.g., research poster, oral presentation, and written thesis) that are generated from the scientific studies. Freshmen are also involved in various learning activities, such as using Excel spreadsheets, data reduction approaches, and determining appropriate sample sizes.

All of these exercises are intended to give freshman a better understanding of the research process, expectations for completing a scientific study, and final products to be generated following the completion of the research. Sophomores and juniors are also coupled together in break-out groups within individual research clusters. The primary focus of the sophomores is to learn how to identify a research question, and the juniors facilitate that process by discussing their experiences. Because juniors have already identified their research topic, their primary focus is to identify the specifics of their project, plan the necessary field, laboratory, and/or modeling activities, and initiate the study. Throughout these meetings, the research cluster mentors facilitate discussions with the sophomores and juniors and guide the process of project identification and initiation. These students would also participate in additional learning activities, such as writing a good abstract, presentation of visual data, and critiquing scientific presentations.

While seniors also play a mentoring role during meetings with underclassmen, their primary responsibilities include completing their research project, data synthesis and analysis, and producing the final products. At the end of the academic year, seniors are required to submit an undergraduate thesis that would be structured similarly to a graduate thesis (however, the scope would be narrower in focus than graduate-level research). This thesis should lend itself to be converted into a manuscript for submission to an appropriate peer-reviewed journal. The seniors will also be required to participate in two symposia (a separate poster and paper session) held on consecutive days. For the poster session (which could be held on a Friday afternoon), seniors would be required to develop a scientific poster that follows predetermined guidelines. During this session, the students will stand next to their poster and field questions from SFOS faculty, staff, and graduate and undergraduate students as well as invited guests (e.g., natural resources agency personnel, UAF officials, etc.). The following Saturday morning, an oral paper symposium will be held in which the seniors would be required to give a fifteen-minute scientific presentation (plus five minutes for questions and answers). This session would also be attended by SFOS personnel and invited guests from the previously identified groups. For both the poster and paper symposia, the student presenters would be evaluated in terms of both presentation quality and scientific merit. The evaluations would be used to provide feedback to the students and would serve as the basis for a best student poster and best student paper award.

The ultimate end product of these shared, integrated experiences is that the undergraduate students in SFOS will understand how to (1) develop and complete a scientific research project, (2) critically analyze data and integrate the results within the context of the

existing literature, and (3) present the collected information effectively in written, visual, and oral formats.

5. Role of Current Fisheries Faculty

Our current fisheries faculty members teach both undergraduate and graduate courses. With only 25 undergraduate majors and over 75 graduate students, the current primary teaching load is on graduate courses. Fisheries faculty members also spend a large percentage of their teaching time working individually with graduate students. This effort is reflected in the high graduation rate of our fisheries graduate students and the importance of the positions our fisheries alumni occupy in the Alaska fishing industry. Three of our fisheries faculty members also serve a vital community role as members of the Science and Statistical Committee of the North Pacific Fishery Management Council, with Dr. Gordon Kruse serving as the Chair.

Our current SFOS fisheries faculty will be directly involved in this new initiative, both in curriculum development and delivery. As noted above, the new B.A. in Fisheries will share many courses with the current B.S. in Fisheries, a program in which many of our faculty are now instructors. The listing below shows current faculty and the undergraduate fisheries courses they teach. It also lists the area of expertise in which new courses to support the curriculum could be developed. Additionally, new faculty will be hired to assist in the delivery of the academic program and to conduct research important to understanding the effect of the changing ecosystem on Alaska fisheries. Current SFOS fisheries faculty members are listed below:

Milo Adkison, Associate Professor
Current Undergraduate Courses: FISH 421 – Fish Population Dynamics
Potential Undergraduate Courses
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
Courses in area of expertise: Marine policy analysis, bioeconomics, applied statistics

A. J. Gharrett, Professor
Current Undergraduate Courses: BIOL 362 – Genetics
Potential Undergraduate Courses
Courses in area of expertise: fisheries genetics, molecular techniques, evolutionary genetics

Gordon Haas, Assistant Professor
Current Undergraduate Courses: FISH 388 – Fishes of Alaska, FISH 427 – Ichthyology
Potential Undergraduate Courses
Leaving UAF May 2007

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

Nicholas Hughes, Associate Professor
Current Undergraduate Courses: FISH 400 – Fisheries Science, FISH 401 – Fisheries Management, FISH 493 – Freshwater Ecosystems
Potential Undergraduate Courses
Courses in area of expertise: fisheries behavioral ecology, limnology

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

Margaret Merritt, Adjunct Professor
Current Undergraduate Courses: FISH 100 – Introduction to Fisheries, FISH 493 – Decision-Making Techniques in Fisheries Management
Potential Undergraduate Courses
Courses in area of expertise: fisheries socioeconomics, fish population assessment, decision-making tools

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

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

Most of our fisheries faculty are teaching undergraduate courses now, with several using distance delivery to do so. With an increasing undergraduate student population attracted to this new B.A. in Fisheries, our faculty will expand their undergraduate teaching activities. Their participation in degree program development and approval process will instill an ownership in the program among our current faculty. It is likely they will add undergraduate courses in their areas of interest that we have not yet anticipated. In addition, the broader program will provide opportunities for our Marine Advisory Program (MAP; http://seagrant.uaf.edu/map) faculty to participate more fully in this B.A. degree program than they have in the current B.S. degree.

6. Relationship with the University of Alaska Southeast (UAS)

The previous version of this proposal failed to mention that we will involve University of Alaska Southeast (UAS) in the development of the expanded fisheries curriculum. We neglected to mention this because UAS faculty members have always been involved in our fisheries program. UAF SFOS and UAS have enjoyed a strong relationship in fisheries for nearly twenty years. Our UAF Fisheries faculty members teach UAS courses and UAS faculty teach UAF courses in Juneau. Currently, five (5) UAS faculty have joint fisheries appointments with SFOS:

Dr. Ginny Eckert, Assistant Professor (appointed February 18, 2001)
Dr. Brendan Kelly, Associate Professor and Dean (appointed November 11, 1996)
Dr. Michael Stekoll, Professor (appointed July 1, 1989)
Dr. Sherry Tamone, Assistant Professor (appointed February 18, 2001)
Dr. David Tallmon, Assistant Professor (appointed July 1, 2005)

These UAS faculty participate in research with UAF faculty and work with UAF graduate students on a regular basis. For example, Dr. Stekoll is the advisor of a UAF graduate student in Fairbanks. Dr. Eckert is the advisor of UAF students in Juneau. One of the benefits of this initiative is that we will expand this relationship between UAS and UAF in the execution of the new fisheries curriculum. Students in Juneau will be taught and mentored by both UAS and UAF faculty.

On August 11, 2006, Dr. Bill Smoker and Dean Denis Wiesenburg met with UAS Chancellor John Pugh in Juneau to continue our discussion on how to strengthen our ongoing collaborations. On August 23, 2006, Dr. Smoker, Dean Wiesenburg and UAF Chancellor Steve Jones met with Ms. Kate Sullivan, UAS Assistant Professor of Fisheries Technology and director of the Fisheries Technology program in Ketchikan. This meeting was designed to explore ways that our UAF undergraduate program could collaborate with and support the UAS Fisheries Technology program.

A meeting was also held in Ketchikan on August 24, 2006 to further define and formalize the UAF – UAS relationship concerning the plan for the new B.A. degree in Fisheries. Attendees at the meeting were UAF Chancellor Steve Jones, UAS Chancellor John Pugh, UAF SFOS Dean Denis Wiesenburg, UAF Fisheries Division Director Bill Smoker, and UAS Assistant Professor of Fisheries Technology Kate Sullivan. The parties at the meeting agreed to both continue and expand the profitable partnership in fisheries that has been in effect for the two universities since 1987. The two Chancellors agreed to the following statement to be included in this proposal:

Joint Declaration

"The University of Alaska Fairbanks (UAF) fisheries degree programs have always benefited from a strong, mutually-beneficial relationship with the University of Alaska Southeast (UAS). Our joint faculty arrangements have been extremely successful in delivering graduate education in Southeast Alaska. The expansion of the undergraduate fisheries program planned by UAF has significant benefits to UAS including the return of

undergraduate fisheries students to Juneau. UAS faculty will work with UAF faculty in the development of the new curriculum to assure that the new fisheries curriculum and its courses can be coordinated with current and planned UAS courses in fisheries and other sciences. We agree that our two faculties working collaboratively can deliver a more effective fisheries program than either one individually. Therefore, we agree to expand our collaboration between the UAS and UAF faculty in the planning and implementation of this new program to achieve the best result for Alaska.

We are jointly and fully committed to implementing this new fisheries initiative."

Signed: Steve Jones, UAF Chancellor and John Pugh, UAS Chancellor
Dated: August 25, 2006

The Fisheries program will build upon strengths of our existing program by offering undergraduates the option of studying in either Juneau or Fairbanks for a portion of their B.A. or B.S. degree. This "two-plus-two" program provides flexibility to Alaska's students and allows them to take advantage of the diverse opportunities in both communities.

The two-plus-two program allows lower-division students to complete their preparatory work (freshman and sophomore years) at any MAU (UAA, UAS or UAF) and complete their upper-division work in Fairbanks or in Juneau. In Fairbanks, faculty and the fisheries community specialize in interior, freshwater fisheries, while Juneau faculty and the fisheries community focus on marine and coastal fisheries.

We value the two-plus-two model because it allows students the opportunity to fully participate in the scientific communities of both locations. Students can not only take more diverse courses, but will also interact with a greater diversity of faculty members, who in turn represent a broad range of interests. This model is an essential feature of our plan to develop a new B.A. curriculum and to enhance our existing B.S. program.

Most importantly, students have the opportunity to conduct research in two different scientific communities. A vital component of these students' undergraduate careers at SFOS will be their active role as researchers. In the two-plus-two model, students will be able to work in university laboratories at UAF or UAS, while also having an opportunity to work in the laboratories of various fisheries agencies.

The long collaborative relationship between UAS and SFOS Fisheries will only grow with this model. Our fisheries faculty and UAS faculty cross-teach courses, enjoy joint appointments, and regularly join together on collaborative projects. The two-plus-two program will allow us to further expand this relationship and we are confident that it will be highly effective. UAS has entered into formal agreements specifying similar arrangements with other academic programs at other MAUs and we expect to be able to execute such an agreement with them as we continue the development of our undergraduate B.S. and B.A. programs. The existing cooperative relationship with SFOS Fisheries, UAS Biology and UAS Fisheries Technology is an example of such a successful partnership. As a model, we will use the UAS agreement with UAA's nursing

program that UAS Chancellor John Pugh has provided us as an example. That continuing agreement makes UAS a "Partner Campus" to UAA to facilitate the delivery of the nursing education program.

The planned two-plus-two program will benefit students at both UAF and UAS and can be conceptualized in the table below which is designed to be instructive but not completely inclusive. We will work to make the program as broad as possible to benefit B.A. and B.S. students at both locations and throughout the state via distance learning.

	Campus	B.S. degree subjects	B.A. degree subjects
Two+Two Bachelors Program Lower Division (Freshmen, Sophomore) UAF, UAS or UAA	Upper Division (Junior, Senior) UAF - Fairbanks	Freshwater ecosystems and fisheries; Systematic biology, ecology of fishes, Quantitative methods. Recreational, subsistence use of freshwater fishes. Human factors, policy analysis	Minor in appropriate subject. Economics of renewable resource exploitation. Human factors. Operation, management of fisheries firms
	Upper Division (Junior, Senior) UAS - Juneau	Marine ecosystems and fisheries; Systematic biology, ecology of fishes; Quantitative methods of resource management and of conservation science, Commercial, recreational harvest of marine and salmonid fishes. Human factors, policy analysis	Minor in appropriate subject. Resource economics, operation, management of firms, environmental studies
Employment		Fishery Research, Harvest Management	Fishing Industry, Community Development
Qualification Earned		▪ American Fisheries Society Certified ▪ Alaska Fishery Biologist I (AK Dept of Fish & Game) ▪ US GS 5-7 Research Fishery Biologist. ▪ US GS 5-7 Fishery Bio[4] ▪ US GS 5-7 Natural Resource Manager ▪ Enter graduate study biological sciences, resource conservation environmental science	▪ Junior management position in fishing industry, non-governmental organizations, for profit and non-profit corporations ▪ Enter graduate study law, administration, and environmental studies ▪ US GS 5-7 Natural Resource Manager

7. Methods of Assessment

Performance Measures

To ensure that we are meeting the expectations of the University of Alaska and the Rasmuson Foundation, we will establish performance measures to evaluate the fisheries program at regular intervals. We anticipate using the work force performance survey and input from the Fisheries Excellence Committee to establish these metrics and to modify them during the course of this initiative. Based upon our current analysis of our capabilities, university policies and industry needs, we have established the following metrics as a starting point for evaluation:

New and revised Curricula at Bachelor's Level

- B.A. in Fisheries Approved by Board of Regents July 2008
- Minor in Fisheries approved by Faculty Senate July 2008
- Revisions to B.S. in Fisheries approved by Faculty Senate July 2008

Student Enrollment for B.A. and B.S. Degrees

- Undergraduate enrollment increase from present 25 to 50 in Academic Year (AY) 2009 and to 100 in AY 2012
- Alaska Native/Rural Alaskan enrollment from present 1 - 5 to 10 -15 in AY 2009
- Graduate enrollment increase from present 60 to 70 in AY 2009 and to 75 in AY 2012

B.S./B.A. Graduates

- From 2 to 6 per year in AY 2009
- Increase to 20 per year in AY 2012
- Maintain 20 graduates per year for program years 5 to 20.

M.S./Ph.D. Graduates

- From 5 - 10 per year to 6 - 12 in AY 2009 and to 8 - 15 in AY 2012

Research Activity in Fisheries/Fisheries Oceanography

- From $1.5M currently to $3.0M research expenditures per year by AY 2012

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 initiative, we consider 20 graduates per year for the mature program at five years to be the sustainable level of productivity for the next 15 years. As has been stated, if the program is wildly successful, we anticipate additional resources would become available from public and private sources to further expand the program.

In summary, the performance measure for undergraduates (B.A. and B.S.) completing the program would be:

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

The total number of students enrolled from year 5 forward would be 100. Increasing beyond 100 undergraduates would require additional resources, especially in facilities.

Outcomes Assessment

A key to the success of our undergraduate 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.

Advising students in progress

At UAF, undergraduate and graduate students are assigned an advisor at the beginning of their program of study. Communication between 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 (http://www.uaf.edu/advising/faculty/index.html#Resources) which has various sources of general information for advisors. Advisors also have access online through the statewide University of Alaska system (http://www.uaonline.alaska.edu) to each student's current transcript of courses and grades, to her or his 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. Graduate students are further assigned a committee of advisors who help each student define a program of study that will meet degree requirements and who, as required by the UAF Graduate School, monitor the student's progress toward the degree at committee meetings at least once each academic year.

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 is in the process of incorporating these lists into an online-accessible database programmed in 'Filemaker', a commercially-available software. At present this system incorporates information about graduate students (demographic information, biographic information, test scores such as GRE/TOEFL, program forms

such as Graduate Study Plan, Annual Report of Committee Meeting, Advancement to Candidacy, Report on Comprehensive Exam, Report on Thesis Defense, a copy of the approved thesis' abstract). The database includes information on advisors and advisory committee members, including annual allocations of advisor workloads to each student.

Planned improvements to this database include the inclusion of assistantships and fellowships awarded to each graduate student. Planned modifications also include 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.

The School also maintains a secure online system for reviewing graduate applicants including each applicant's application form, statement of purpose, letters of recommendation, transcript of the Graduate Record Exam, and transcripts of college and university grades. This application material is kept accessible online and is a valuable reference tool for advisors and advisory committees as they help matriculated graduate students develop programs of study and for the faculty as they monitor the quality of their student body.

As part of this initiative, a staff level Recruiting and Retention Coordinator will be employed by SFOS to 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 the School (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, undergraduate and graduate, 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. in Fisheries program has as its 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.

The similar goals in our M.S. and Ph.D. in Fisheries programs' Outcomes Assessment Plans are implemented through formal review of the Comprehensive Exam and Thesis produced by each student's Advisory Committee. 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.

8. Timing

To undertake this initiative, SFOS needs to improve its infrastructure and add additional faculty to aid in the delivery of this new degree program. The development of the degree program will require time from SFOS faculty and the SFOS Curriculum Committee to design the courses, organize the curriculum and prepare it for approval. We anticipate that this effort will be undertaken early during the 2006-2007 academic year with program approval expected by the Board of Regents before the end of academic year 2008. Input from the Rasmuson Fisheries Excellence Committee during this development period will be extremely beneficial. A revised and updated timeline is provided in Appendix I.

Faculty development (hiring) is currently underway with funds supplied by the university for this initiative. An additional $75,000 for fisheries faculty salaries was added to the SFOS budget during FY07 (beginning July 1, 2006). To develop a new classroom for this program in the O'Neill Building in Fairbanks, the Alaska Sea Grant Program was relocated on July 1, 2006 to the second floor of the Wells Fargo Building on University Avenue in Fairbanks. This move, which will cost SFOS $100,000 per year, was necessary to provide the space needed to construct a new distance learning classroom and to provide office space for new faculty hired to successfully conduct this program.

If funds are made available through this initiative, the new classroom would be constructed during the 2007-2008 academic year. UAF has committed to sharing equally the costs of creating the new classroom and office areas. The estimate for these renovations is $700,000 ($350,000 from UAF funds and $350,000 from this initiative). Using funds currently available at UAF, the design and engineering for the needed facility modifications will begin in fall 2006, even before the Rasmuson Foundation could possibly approve this initiative. This strong commitment by UAF to this effort will allow us to move forward with new facilities quickly once funding is received. The new $21,500,000 UAF Lena Point Fisheries Facility that is under construction in Juneau will solve the classroom and teaching laboratory needs for our students in Juneau.

The matching funds from UA Statewide (as described by President Hamilton in his letter of November 15, 2005) will not be available until the funds from the Rasmuson

Foundation are provided. The Rasmuson Foundation funds and the associated matching funds will need to be committed before remaining new faculty can be hired to support this initiative. We anticipate making infrastructure improvements and procuring needed furnishings and equipment for offices, classrooms, laboratories and distance learning as soon as the initiative funds become available. The recruitment process for new faculty will begin in September following the availability of the initiative funds in order to follow an orderly faculty hiring process: advertise in September and October, review candidates in November, interview candidates in December and January, offer the positions in February or March with a candidate start date of July 1.

This faculty hiring timeline will assure that we hire the best qualified faculty and will allow a major announcement of the new initiative and the faculty openings to be made at the national meeting of the American Fisheries Society (AFS) meeting, held in September each year. The 2007 meeting will be held September 2-6, 2007 in San Francisco, California. Over 4000 fisheries scientists attended the September 2005 AFS meeting in Anchorage. SFOS uses this meeting to recruit faculty and students each year. We hope to make a big splash at this meeting by advertising for four new faculty at one time. Besides attracting faculty applicants, our high level of activities at AFS will bring significant attention to our UAF fisheries program and the support it is receiving from the Rasmuson Foundation.

To jump start this initiative, SFOS has already committed to hiring the Fisheries Undergraduate Coordinator that will direct the development of our improved fisheries undergraduate program. The search process for this position produced twenty-nine applicants and four were interviewed in July 2006. The search was successful and we have made a job offer to a candidate who is an Associate Professor at Purdue University where he is responsible for an undergraduate fisheries program. Dr. Trent Sutton has accepted our offer and will join us as the SFOS Undergraduate Fisheries Coordinator in June 2007. A second, new fisheries faculty member, Dr. Amanda Rosenberger, begins her tenure at UAF on November 11, 2006.

9. Program Sustainability

In reviewing our plan prior to the July 6 meeting, Dr. Andy Rosenberg commented that *"I think it will be important to the Foundation to get a sense that the University is truly committed to this as a signature program. I hope the Administration can make such a commitment."* In response to that comment, UAF Provost Paul Reichardt responded to Dr. Rosenberg in a July 29, 2006 e-mail as follows:

Date: Thu, 29 Jun 2006 07:31:50 -0800
From: Paul Reichardt <fnpbr@uaf.edu>
To: "Rosenberg, Andy" andy.rosenberg@unh.edu

Andy:
Although you and I haven't talked about all this over the past few months, I have followed the saga and your involvement in it. I just want to say thanks for your work and good ideas. Denis truly is committed to developing a great program, and your

advice/involvement has been important to developing a good plan. I'm not sure exactly what it will take to make this into a "signature" program, but I agree that's the type of program we want. I also agree with those (you included) who believe that we don't just want a copy of programs that are elsewhere in the country; we want and need a program designed to meet Alaskan needs while at the same time maintaining the standards that will make our graduates competitive on the national scene--be it in competing for jobs or slots in graduate schools after graduation from UAF. Again, thanks for your work and involvement.
Paul

A further commitment was made by UAF in preparing its FY08 budget for submission to the Alaska legislature. In that budget, UAF has requested as its number three priority $1,000,000 in new funds to be added permanently to the SFOS base budget for "Undergraduate Fisheries Program Expansion." The number one and two items for FY08 were holdovers from FY07 – Teaching Assistantships and Graduate Student Fellowships and matching funds for the Alaska University Transportation Funds. This significant commitment by UAF means that if the legislature appropriates these funds during its FY08 session, the matching funds for each year of this initiative are assured. A copy of the one page budget document that UAF submitted is shown in Appendix J.

For the first five years of this initiative $2,000,000 per year or more will be invested in the program. During the first few years, a significant amount of the funding will be directed toward improving infrastructure – classroom, offices, furnishings, video conferencing equipment, laboratory equipment, etc. After five years, our budget projection indicates the new faculty will cost approximately $1,000,000 per year. Fortunately, UAF has requested this amount from the legislature and these funds will sustain the faculty indefinitely. Additionally, the new faculty members are expected to increase SFOS research capacity by approximately $2,100,000. These funds will be used to support graduate students and provide supplies, equipment and summer faculty salaries. Additionally, the overhead returned to SFOS by UAF on these new research funds would provide about $280,000 per year to support program activities. Finally, increasing the number of enrolled undergraduates from the current 25 to 100 should add about $225,000 to our budget as part of the tuition is returned to the school that generated the enrollment. Therefore, we anticipate the program will have a sustained budget of $1,500,000 at the end of this five year initiative assuring its sustainability with no requirement of additional funds from the Rasmuson Foundation. Any funds above this base amount that are raised through development activities (e.g. from the fishing industry, scholarships from Alaska Native Corporations or CDQ groups, etc.) will allow us to further enhance the base program.

We will not rely solely on the funds provided by UAF to continue this initiative. SFOS has begun and will continue a vigorous effort to find external funds to support our efforts. While amounts that we will be able to raise are difficult to estimate, the foundations, companies and groups that we will approach for future funding of this initiative include:

- M.J. Murdock Charitable Trust (equipment)
- Moore Foundation (salmon research)

- Comer Science and Education Foundation (arctic interests)
- Royal Caribbean Ocean Fund (ocean interests)

- Aleutian Pribilof Island Community Development Association (APICDA)
- Bristol Bay Economic Development Association (BBEDC)
- Central Bering Sea Fishermen's Association (CBSFA)
- Coastal Villages Region Fund (CVRF)
- Norton Sound Economic Development Corporation (NSEDC)
- Yukon Delta Fisheries Development Association (YDFDA)

- Icicle Seafoods, Petersburg
- Peter Pan Seafoods, Dillingham
- UniSea, Inc., Unalaska
- Alyeska Seafoods, Unalaska
- Westward Seafoods, Unalaska
- Trident Seafoods, Seattle
- American Seafoods Company, Seattle
- Arctic Storm, Inc., Seattle
- Glacier Fish Company, Seattle
- Starbound LLC, Seattle

During the last year, SFOS Dean Denis Wiesenburg has met with all but one of the CEOs of the CDQ groups listed and has sent letters of enquiry to most of the foundations listed. Dean Wiesenburg has also had initial meetings with all of the seafood processors listed. This effort will continue throughout the tenure of this initiative.

UAF has recently hired a development officer (Dr. Judyth Wier) to assist us with fundraising. Additionally, President Hamilton has assigned Ms. Lorali Carter, Corporate & Foundation Relations Manager, Office of Statewide Development, to work with us specifically to raise additional matching funds for this initiative.

10. Recruiting and Retaining Alaska Natives and Rural Alaskans into Fisheries

A significant effort will be made to recruit Alaska Natives and rural Alaskans into our program. Our Marine Advisory Program faculty have recently completed a study to determine the barriers that have prevented more Alaska Natives from pursuing fisheries academic programs. The report by Paula Cullenberg and Dolly Garza will be published in September 2006. Their work is funded by the National Oceanic and Atmospheric Administration (NOAA) who has committed to working to provide ocean-related educational opportunities to minorities. The five recommendations included in Cullenberg and Garza's draft report are:

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's 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 (SFOS) 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 Natives and rural Alaskans 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 Natives and rural Alaskans in fisheries and marine science.

We include this material to show that our faculty have been actively engaged in determining how to recruit and retain Alaska Natives in our fisheries program.

Dean Wiesenburg and Paula Cullenberg have had multiple discussions with ANSEP – both Herb Schroeder at UAA and Dan Solie at UAF – to best determine how to coordinate our efforts. These meetings have taken place over the last eight months in Anchorage and Fairbanks. During our last meeting with Herb Schroeder in Anchorage on October 13, 2006, we came to a final agreement on how to best work with ANSEP in a mutually beneficial partnership. The results of that meeting are documented in a letter included as Appendix G.

Our relationship with ANSEP is solid. We understand the ANSEP model, appreciate the success of ANSEP and have no desire or intention to change the ANSEP model in any way. We will work with the ANSEP coordinator in Fairbanks, Dr. Dan Solie, to provide any help and information requested in addition to the funds we will provide to assist their effort to recruit Fisheries students. We know that there are many pathways in which students will join our Fisheries program and that ANSEP will be an important pathway.

SFOS will provide support to ANSEP to provide a staff member who will work with fisheries students. Additionally, we will provide scholarship funds to ANSEP for fisheries students. These scholarship funds will be solicited outside of this initiative from Alaska Native corporations and Community Development Quota (CDQ) groups. Our Recruiting and Retention Coordinator will work with the ANSEP recruiters to encourage students interested in science to consider fisheries as a degree choice. By combining our resources with the ANSEP model, we can operate more effectively in recruiting and retaining Alaska Natives in this new fisheries curriculum.

11. Conclusion

With this new degree program in place, one could view the multiple opportunities available to University of Alaska students as a continuum from a B.S. in Fisheries (science) to a B.A in Business Administration (business). In the middle of this continuum will be both a Minor in Fisheries available to all students and a B.A. in Fisheries available to students with a directed interest in all aspects of the Alaska fishing industry.

We take to heart the comments that Ed Rasmuson made at the April 7, 2006 meeting of the Fisheries Excellence Committee that the UAF School of Fisheries and Ocean Sciences is important to the Rasmuson family. We need your help. The budget realities of the State of Alaska during the last decade combined with increased costs for benefits and facility operations have seriously impeded the ability of SFOS to continue its work at the level needed to support the fisheries and ocean sciences education and research needs of Alaska. Without this support from the Rasmuson Foundation we will not be able to expand the opportunities available to students interested in studying and managing the most important marine resources of Alaska.

On March 18, 1998, Elmer Rasmuson addressed those assembled at the Rasmuson Fisheries Research Center Annual Meeting in Anchorage. Elmer funded this program to provide graduate fellowships to SFOS students. In concluding he commented, *"I hope that you see what we are trying to do and that you are part of it. I'm very encouraged by the presentations that I have heard and what you are doing. We intend to expand it."* I hope you will take this opportunity to expand the relationship that Elmer Rasmuson began with the UAF School of Fisheries and Ocean Sciences in 1994 by trusting us with your resources to undertake the initiative described here.

12. Budget

Included below is a budget explanation. On the following three pages, we provide a five year budget for this initiative listing (1) the total funds needed for this initiative and (2) detailing which funds will come from the Rasmuson Foundation. Additionally, (3) a calendar year 2012 budget is provided showing the level of UAF funding needed to sustain the program after the Rasmuson Foundation grant has ended. We do not anticipate requesting funds for this initiative beyond the $5,000,000 requested by this proposal.

Budget Explanation

Matching Funds – In his letter of November 15, 2005, to Ed Rasmuson, University of Alaska President Mark Hamilton committed to guarantee the required matching funds for this UAF initiative using "Natural Resource and privately donated funds." This guarantee has allowed us to move forward while continuing to pursue other sources of matching funds as noted. President Hamilton's letter is attached as Appendix K.

Faculty Salaries – Seven new faculty members would be hired, four in Fisheries and three in Oceanography (ocean observing). Faculty would be paid for twelve months the first several years and reduced months in following years until they were paid for nine months in the out years. University faculty are typically paid nine months salary and obtain their summer salaries from research funding. Some current faculty members who are only paid seven months per year for academic purposes would have their salary increased under this initiative from their current seven months per year to nine months per year to allow them to participate more fully in our academic programs. One of the new faculty members (Dr. Trent Sutton) has been designated as the Undergraduate Fisheries Coordinator with the responsibility for overseeing that 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.

The new positions that will be devoted to this effort were listed in the proposal budget.

- Associate Professor of Fisheries and Undergraduate Coordinator, Fairbanks
- Assistant Professor of Fisheries, Fairbanks
- Assistant Professor of Fisheries, Fairbanks
- Assistant Professor of Fisheries, Juneau
- Assistant Professor of Marine Science (Ocean Observing), Fairbanks
- Associate Professor of Marine Science (Ocean Observing), Fairbanks or Juneau
- Associate Professor of Marine Science (Ocean Observing), Seward or Fairbanks
- Visiting Professor, location to be determined

The Undergraduate Coordinator has been selected: Dr. Trent Sutton, currently an Associate Professor at Purdue University. One of the Assistant Professors in Fairbanks is on board: Dr. Amanda Rosenberger. The other positions will be recruited once funding is in place. An additional faculty position in Fisheries is currently available in Juneau and we are undergoing negotiations to hire a full professor for this position. If this new hire is successful, our Juneau Fisheries faculty will include six (6) full professors, one (1) associate professor and two (2) assistant professors when our hiring is complete. Our Fairbanks Fisheries faculty, with current faculty included, will include no (0) full professors, two (2) associate professors, and three (3) assistant professors.

The final Fisheries faculty balance will be nine (9) in Juneau and five (5) in Fairbanks. We also have one (1) Fisheries faculty member in Kodiak and other faculty, associated with the Marine Advisory Program (MAP) in coastal communities across Alaska, who will contribute to our academic program in Fisheries. We anticipate that all Fisheries

faculty will participate in the development and execution of this initiative no matter where they are located.

Staff Salaries – Several staff would be employed to support the program. One would be a recruiting and retention coordinator for the overall program who would also be responsible for establishing the summer intern programs with different components of the Alaska seafood industry and government. The Public Information Officer will work as part of the recruiting effort and prepare written and web-based material to support this initiative. The facility manager will be based in Juneau to support the program there. In our partnership with the ANSEP program, we will provide ANSEP $50,000 per year to allow them to employ (half-time) a staff person to work with our Fisheries students or for other purposes they deem appropriate to support this initiative.

Graduate Student Stipends – Three graduate students on assistantships will be allocated to this effort. These students will assist as laboratory instructors for our undergraduate. One student in Fairbanks and one in Juneau will be assigned to assist the faculty teaching courses through distance delivery in order to increase the quality of the experiences. One student will be designated to assist in tutoring the undergraduate fisheries students. Funds are included for graduate student stipends and tuition.

Faculty and Student Travel – Moving students and faculty among SFOS locations (esp. Fairbanks and Juneau) will enable faculty and students to develop the positive relationship they will need to make this effort successful. Funds for this purpose were supported by Dr. Andy Rosenberg who felt melding the faculty and students into a more cohesive unit was important and would require travel by both faculty and students. Limited travel funds have been an impediment in the past. Travel funds will also be used to bring in distinguished seminar speakers to enrich the educational experience we can provide. Getting our students into the field through field experience courses to study the Alaska fishery in its important locations is expensive because of the distances and remoteness of some of the locations that will be used.

Infrastructure Support – At the present time, SFOS does not have a high quality distance learning classroom or an adequate Fisheries teaching laboratory. Space on the UAF campus West Ridge has been identified for both of these important facilities. Some funding will be devoted to refurbishing these spaces to provide an outstanding environment for learning both in the classroom and in the laboratory. Funds are planned for renovation and furnishing of the laboratory, classroom, and office space for faculty and staff. UAF will provide half of the funds for facility improvements as matching and has committed funds in the current fiscal year to this fisheries initiative.

Equipment – Distance learning equipment 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 systems will be used to assure the best quality communication. Student computers will also be purchased to have the computational capabilities needed for some of the classes. Laboratory equipment for fisheries and ocean science will be upgraded to assure our students have access to the top of the line equipment available at other institutions.

Scholarships – To attract the best undergraduates to our program and to provide needed support for student from rural Alaska, we plan to provide student scholarships and continue them through the four years of the undergraduate program for successful students. We plan to start this with a few $6,500 scholarships (the ANSEP standard) the first year and increase this each year during the period of this initiative. We plan to seek additional scholarship funds to supplement the funds from the Rasmuson Foundation by approaching the fishing industry, CDQ groups, Alaska Native corporations and various foundations.

Faculty Recruiting and Startup – These funds will be used to advertise and interview prospective faculty members (estimated at $25,000 per search) and to provide moving costs for faculty moving to Alaska from other states (typically $20,000 per faculty member). These funds will also be used to provide start up funds for new faculty (typically $100,000 per faculty member) to allow them to establish a research program at UAF.

Generation of Funds to Assure Continuation for Calendar Year 2012+ – We will need at least $1,500,000 per year to continue this initiative after the funding from the Rasmuson Foundation is complete in five years. To enhance this initiative during the period of funding and to assure continuation of the program after the five-year period of funding from the Rasmuson Foundation, five different methods of securing funds are being pursued:

1. Legislative Appropriation. As previously described, UAF has requested $1,000,000 from the 2007 Alaska legislature to be added to the SFOS base budget (see Appendix J). This request was approved by the University of Alaska Board of Regents on November 1, 2006 and will be submitted to the legislature. As an addition to the base budget for SFOS, the $1.0M will be available each year to support this initiative, after approval by the legislature.

2. Increased Tuition Return. Each year SFOS receives approximately $450,000 in tuition funds from UAF. These funds are based upon the number of student credit hours generated. The actual amount for fiscal year 2006 was $447,655. This amount is based upon a total of 150 students – 124 graduate students and 26 undergraduates. An increase of 75 students as projected under this initiative should generate about $225,000 per year in additional funds that could be used to support this initiative. As the number of students in the program grows over the years, the additional tuition received will increase each year to this total when 75 new students are enrolled in the fisheries programs.

3. Increased Research Funding and Indirect Cost Recovery. UAF School of Fisheries and Ocean Sciences faculty annually receive awards averaging $16,192,000 over the last four fiscal years. These funds are generated by 50 faculty members. An addition of seven new faculty members associated with this initiative should generate on average an additional $2,250,000 in research dollars each year. The university returns part of the overhead to SFOS on the research overhead generated on these research funds. These returned funds are called Indirect Cost Recovery (ICR). The ICR received by

SFOS has averaged $1,939,000 over the last four fiscal years, again generated by 50 research active faculty members. Therefore, we anticipate an increase of ICR from UAF to SFOS of about $275,000 when the seven new faculty members have fully developed research programs.

4. Corporate Support from the Fishing Industry. As described previously, the University of Alaska Statewide Administration has assigned Ms. Lorali Carter, Corporate & Foundation Relations Manager with the Office of Statewide Development, to work with the SFOS Dean to secure corporate support for this initiative. Over the last year, Ms. Carter and Dean Wiesenburg have met with CEOs of CDQ groups and others to advise them of this planned initiative and to remind them that they could participate in supporting this effort. Development of this type requires relationship building and that process is underway. Many responses have been that if we can show them some successes from the initiative that they would be willing to provide support. This effort will continue during the course of the initiative with the support of Ms. Judyth A. Wier, UAF Associate Vice Chancellor for Development. Some of the companies we are working with are listed in section 9 of this proposal and we look forward to suggestions from the Rasmuson Foundation for other corporations to approach. The SFOS Dean will have the responsibility for raising funds from these corporations with support provided by UAF and UA Statewide.

5. Support from Other Foundations. Section 9 also lists some benevolent foundations that we plan to approach for additional funding for this initiative and a development plan will be established to approach these foundations and others. We would welcome suggestions from the Rasmuson Foundation on other foundations to approach. The M. J. Murdock Charitable Trust has a mission "to enrich the quality of life in the Pacific Northwest by providing grants to organizations that seek to strengthen the region's educational and cultural base in creative and sustainable ways." Each year, UAF is eligible to submit one or two proposals for Murdock funding. They have supported UAF equipment needs in the past and we had discussions last year with John Vanzytfeld of the Murdock Trust about providing provide equipment support for the planned SFOS fisheries facility at Lena Point in Juneau, where many of our fisheries students will be educated. He seemed very interested in a proposal to equip our new facility and we are planning to submit a $500,000 proposal (over two years) to them for the equipment needed for this new facility (http://www.sfos.uaf.edu/lenapoint). We have also made inquiries to the Comer Science and Education Foundation and others and will continue to do so with assistance from Judyth A. Wier, UAF Associate Vice Chancellor for Development. We will work with Ms. Wier in early January to prepare a development plan to provide additional support for this initiative.

PROJECT TITLE: Charting a new course for undergraduate fisheries in Alaska
PI: Denis Wiesenburg and William Smoker
START: January 1, 2007
END: December 31, 2011

Rasmuson Foundation funding goes to half of faculty and staff salaries plus $13,000 scholarships each year, ANSEP funding, half of most other expenses other than the equipment for the Lena Point facility

Faculty salaries increased by a 4.5% increment each year beginning yr. 2

					Total UAF + RF Funding by Year						Rasmuson Funding by Year						
					Calendar Year 2007 Year 1	Calendar Year 2008 Year 2	Calendar Year 2009 Year 3	Calendar Year 2010 Year 4	Calendar Year 2011 Year 5	Total Funding UAF + RF	Mos	Calendar Year 2007 Year 1	Calendar Year 2008 Year 2	Calendar Year 2009 Year 3	Calendar Year 2010 Year 4	Calendar Year 2011 Year 5
A. Senior Personnel:	**Name**	**Title**	**Monthly Salary**	**Mo Sal + Ben**												
Associate Professor	Sutton	Undergraduate Coordinator	7750	**11454.50**	$80,182	$143,639	$150,103	$156,858	$163,916	**$694,698**	0.00	$40,091	$71,820	$75,052	$78,429	$81,958
Assistant Professor	Rosenberger	Fisheries - Fairbanks	6250	**9237.50**	$110,850	$115,838	$121,051	$126,498	$132,191	**$606,428**	0.00	$55,425	$57,919	$60,526	$63,249	$66,096
Assistant Professor	TBD	Fisheries - Fairbanks	6250	**9237.50**	$0	$57,919	$121,051	$126,498	$132,191	**$437,659**	0.00	$0	$28,960	$60,526	$63,249	$66,096
Assistant Professor	TBD	Fisheries - Juneau	6250	**9237.50**	$0	$57,919	$121,051	$126,498	$132,191	**$437,659**	0.00	$0	$28,960	$60,526	$63,249	$66,096
Assistant Professor	TBD	Ocean Observing	6250	**9237.50**	$0	$57,919	$121,051	$126,498	$132,191	**$437,659**	0.00	$0	$28,960	$60,526	$63,249	$66,096
Associate Professor	TBD	Ocean Observing	6250	**9237.50**	$0	$57,919	$121,051	$126,498	$132,191	**$437,659**	0.00	$0	$28,960	$60,526	$63,249	$66,096
Associate Professor	TBD	Ocean Observing	7750	**11454.50**	$0	$35,910	$150,103	$156,858	$163,916	**$506,787**	0.00	$0	$17,955	$75,052	$78,429	$81,958
Senior Professor	TBD	Current Monthly Upgrades **	8829	**13049.26**	$26,099	$54,546	$85,501	$119,131	$186,738	**$472,015**	0.00	$13,050	$27,273	$42,751	$59,566	$93,369
Visiting Faculty Member	TBD	Fisheries - Juneau	8829	**13049.26**		$78,296		$86,125	$93,955	**$258,376**		$0	$39,148	$0	$0	$0
	A. Total Senior Personnel				**$217,131**	**$659,905**	**$990,962**	**$1,151,462**	**$1,269,480**	**$4,288,940**		**$108,566**	**$329,955**	**$495,485**	**$532,669**	**$587,765**
B. Other Personnel:		**(full time = 174 hours per month)**														
Public Information Officer	Bailey	NR	3925	**7002.20**	$84,026	$87,807	$91,758	$95,888	$100,203	**$459,682**	0.00	$42,013	$43,904	$45,879	$47,944	$50,102
Academic Recruiter	Murra	NR	3101	**5532.18**	$66,386	$69,373	$72,495	$75,757	$79,167	**$363,178**	0.00	$33,193	$34,687	$36,248	$37,879	$39,584
Juneau Facility Manager (Range 79)	TBD	NR	3701	**6602.58**	$79,231	$82,796	$86,522	$90,416	$94,484	**$433,449**	0.00	$39,616	$41,398	$43,261	$45,208	$47,242
	B. Total Other Personnel Salaries				**229643**	**239976**	**250775**	**262061**	**273854**	**1256309**		**$114,822**	**$119,989**	**$125,388**	**$131,031**	**$136,928**
C. Graduate Assistant Salaries:	**All students work part-time during the academic year and full-time in summer.**															
	Graduate student salaries are multipied by a 11.5% increment each year beginning in yr. 2.															
				Annual Salary												
Masters Graduate Student		Grad Student	GN/GT	22021	**22978.93**	$22,979	$25,622	$28,568	$31,853	$35,517	**$144,539**	0.00	$11,490	$12,811	$14,284	$15,927	$17,759
Masters Graduate Student		Grad Student	GN/GT	22021	**22978.93**	$22,979	$25,622	$28,568	$31,853	$35,517	**$144,539**	0.00	$11,490	$12,811	$14,284	$15,927	$17,759
PhD Graduate Student		Grad Student	GN/GT	25780	**26901.42**	$26,901	$29,995	$33,444	$37,290	$41,578	**$169,208**		$13,451	$14,998	$16,722	$18,645	$20,789
PhD Graduate Student		Grad Student	GN/GT	25780	**26901.42**		$29,995	$33,444	$37,290	$41,579	**$142,308**	0.00	$0	$14,998	$16,722	$18,645	$20,790
	B. Total Graduate Assistant Salaries				**$72,859**	**$111,234**	**$124,024**	**$138,286**	**$154,191**	**$431,386**		**$36,431**	**$55,618**	**$62,012**	**$69,144**	**$77,097**
	Total Salaries and Benefits (A+B+C)				**$519,633**	**$1,011,115**	**$1,365,761**	**$1,551,809**	**$1,697,525**	**$5,976,635**		**$259,819**	**$505,562**	**$682,885**	**$732,844**	**$801,790**
F. Other/Contractual/Services																
ANSEP Partnership Funds					$50,000	$50,000	$50,000	$50,000	$50,000	**$250,000**		$50,000	$50,000	$50,000	$50,000	$50,000
VTN Equipment					$145,000	$100,000	$25,000	$175,000	$25,000	**$470,000**		$110,000	$26,500	$8,000	$91,500	$12,500
Laboratory Equipment					$100,000	$160,000	$0	$115,000	$185,000	**$560,000**		$50,000	$80,000	$0	$0	$0
Building Modifications					$700,000	$90,000	$30,000	$30,000	$30,000	**$880,000**		$350,000	$45,000	$15,000	$15,000	$15,000
Seminar Speaker Travel					$10,000	$20,000	$30,000	$35,000	$40,000	**$135,000**		$5,000	$10,000	$15,000	$17,500	$20,000
Faculty Travel					$10,000	$19,000	$20,000	$20,000	$35,000	**$104,000**		$5,000	$7,000	$10,000	$10,000	$17,500
Student Travel					$5,000	$10,000	$25,000	$35,000	$45,000	**$120,000**		$2,500	$5,000	$12,500	$17,500	$22,500
Furniture					$70,000	$10,000	$10,000	$20,000	$8,000	**$118,000**		$35,000	$5,000	$5,000	$10,000	$3,000
Moving Expenses					$40,000	$70,000	$16,000	$15,000	$15,000	**$156,000**		$20,000	$35,000	$0	$0	$0
Faculty Start Up Costs					$100,000	$300,000	$300,000	$0	$0	**$700,000**		$50,000	$150,000	$150,000	$0	$0
Faculty Recruiting Costs					$75,000	$50,000	$0	$0	$0	**$125,000**		$37,500	$25,000	$0	$0	$0
Student Scholarships					$0	$39,000	$58,500	$78,000	$78,000	**$253,500**		$0	$13,000	$13,000	$13,000	$13,000
Graduate Student Tuition					$35,562	$40,896	$47,030	$54,085	$62,198	**$239,771**		$17,781	$20,448	$23,515	$27,043	$31,099
Equipment for Juneau Fisheries Facility							$250,000	$250,000		**$500,000**		$0	$0	$0	$0	$0
Fisheries Excellecne Committee Expenses					$15,000	$15,000	$16,000	$16,000	$17,000	**$79,000**		$7,500	$7,500	$8,000	$8,000	$8,500
Student Computers					$0	$15,000	$15,000	$15,000	$15,000	**$60,000**		$0	$15,000	$7,500	$7,500	$5,000
	F. Total Contractual/ Services				**$1,355,562**	**$988,896**	**$892,530**	**$908,085**	**$605,198**	**$4,750,271**		**$740,281**	**$494,448**	**$317,515**	**$267,043**	**$198,099**
I. Total Direct Costs (A-I)					**$1,875,195**	**$2,000,011**	**$2,258,291**	**$2,459,894**	**$2,302,723**	**$10,726,906**		**$1,000,100**	**$1,000,010**	**$1,000,400**	**$999,887**	**$999,889**
	Total Funding by Year				**$1,875,195**	**$2,000,011**	**$2,258,291**	**$2,459,894**	**$2,302,723**	**$10,726,906**		**$1,000,100**	**$1,000,010**	**$1,000,400**	**$999,887**	**$999,889**

PROJECT TITLE: Charting a new course for undergraduate fisheries in Alaska
PI: Denis Wiesenburg and William Smoker
START: January 1, 2007
END: December 31, 2011

Rasmuson Foundation funding goes to half of faculty and staff salaries plus $13,000 scholarships each year, ANSEP funding, half of most other expenses other than the equipment for the Lena Point facility

Rasmuson Funding by Year

Faculty salaries increased by a 4.5% increment each year beginning yr. 2

						Calendar Year 2007 Year 1	Calendar Year 2008 Year 2	Calendar Year 2009 Year 3	Calendar Year 2010 Year 4	Calendar Year 2011 Year 5
A. Senior Personnel:	**Name**	**Title**		**Monthly Salary**	**Mo Sal + Ben**					
Associate Professor	Sutton	Undergraduate Coordinator		7750	**11454.50**	$40,091	$71,820	$75,052	$78,429	$81,958
Assistant Professor	Rosenberger	Fisheries - Fairbanks		6250	**9237.50**	$55,425	$57,919	$60,526	$63,249	$66,096
Assistant Professor	TBD	Fisheries - Fairbanks		6250	**9237.50**	$0	$28,960	$60,526	$63,249	$66,096
Assistant Professor	TBD	Fisheries - Juneau		6250	**9237.50**	$0	$28,960	$60,526	$63,249	$66,096
Assistant Professor	TBD	Ocean Observing		6250	**9237.50**	$0	$28,960	$60,526	$63,249	$66,096
Associate Professor	TBD	Ocean Observing		6250	**9237.50**	$0	$28,960	$60,526	$63,249	$66,096
Associate Professor	TBD	Ocean Observing		7750	**11454.50**	$0	$17,955	$75,052	$78,429	$81,958
Senior Professor	TBD	Current Monthly Upgrades **		8829	**13049.26**	$13,050	$27,273	$42,751	$59,566	$93,369
Visiting Faculty Member	TBD	Fisheries - Juneau		8829	**13049.26**	$0	$39,148	$0	$0	$0
	A. Total Senior Personnel					**$108,566**	**$329,955**	**$495,485**	**$532,669**	**$587,765**
B. Other Personnel:		**(full time = 174 hours per month)**								
Public Information Officer	Bailey		NR	3925	**7002.20**	$42,013	$43,904	$45,879	$47,944	$50,102
Academic Recruiter	Murra		NR	3101	**5532.18**	$33,193	$34,687	$36,248	$37,879	$39,584
Juneau Facility Manager (Range 79)	TBD		NR	3701	**6602.58**	$39,616	$41,398	$43,261	$45,208	$47,242
	B. Total Other Personnel Salaries					**$114,822**	**$119,989**	**$125,388**	**$131,031**	**$136,928**
C. Graduate Assistant Salaries:		**All students work part-time during the academic year and full-time in summer.**								
		Graduate student salaries are multipied by a 11.5% increment each year beginning in yr. 2.								
				Annual Salary						
Masters Graduate Student		Grad Student	GN/GT	22021	**22978.93**	$11,490	$12,811	$14,284	$15,927	$17,759
Masters Graduate Student		Grad Student	GN/GT	22021	**22978.93**	$11,490	$12,811	$14,284	$15,927	$17,759
PhD Graduate Student		Grad Student	GN/GT	25780	**26901.42**	$13,451	$14,998	$16,722	$18,645	$20,789
PhD Graduate Student		Grad Student	GN/GT	25780	**26901.42**	$0	$14,998	$16,722	$18,645	$20,790
	B. Total Graduate Assistant Salaries					**$36,431**	**$55,618**	**$62,012**	**$69,144**	**$77,097**
	Total Salaries and Benefits (A+B+C)					**$259,819**	**$505,562**	**$682,885**	**$732,844**	**$801,790**
F. Other/Contractual/Services										
ANSEP Partnership Funds						$50,000	$50,000	$50,000	$50,000	$50,000
VTN Equipment						$110,000	$26,500	$8,000	$91,500	$12,500
Laboratory Equipment						$50,000	$80,000	$0	$0	$0
Building Modifications						$350,000	$45,000	$15,000	$15,000	$15,000
Seminar Speaker Travel						$5,000	$10,000	$15,000	$17,500	$20,000
Faculty Travel						$5,000	$7,000	$10,000	$10,000	$17,500
Student Travel						$2,500	$5,000	$12,500	$17,500	$22,500
Furniture						$35,000	$5,000	$5,000	$10,000	$3,000
Moving Expenses						$20,000	$35,000	$0	$0	$0
Faculty Start Up Costs						$50,000	$150,000	$150,000	$0	$0
Faculty Recruiting Costs						$37,500	$25,000	$0	$0	$0
Student Scholarships						$0	$13,000	$13,000	$13,000	$13,000
Graduate Student Tuition						$17,781	$20,448	$23,515	$27,043	$31,099
Equipment for Juneau Fisheries Facility						$0	$0	$0	$0	$0
Fisheries Excellecne Committee Expenses						$7,500	$7,500	$8,000	$8,000	$8,500
Student Computers						$0	$15,000	$7,500	$7,500	$5,000
	F. Total Contractual/ Services					**$740,281**	**$494,448**	**$317,515**	**$267,043**	**$198,099**
I. Total Direct Costs (A-I)						**$1,000,100**	**$1,000,010**	**$1,000,400**	**$999,887**	**$999,889**
	Total Funding by Year					**$1,000,100**	**$1,000,010**	**$1,000,400**	**$999,887**	**$999,889**

PROJECT TITLE: Charting a new course for undergraduate fisheries in Alaska
PI: Denis Wiesenburg and William Smoker
START: January 1, 2012
END: December 31, 2012

				Calendar Year 2012
A. Senior Personnel:	**Name**	**Title**		
Associate Professor	Sutton	Undergraduate Coordinator		$171,292
Assistant Professor	Rosenberger	Fisheries - Fairbanks		$103,597
Assistant Professor	TBD	Fisheries - Fairbanks		$103,605
Assistant Professor	TBD	Fisheries - Juneau		$103,605
Assistant Professor	TBD	Ocean Observing		$103,605
Associate Professor	TBD	Ocean Observing		$103,605
Associate Professor	TBD	Ocean Observing		$128,469
Senior Professor	TBD	Current Monthly Upgrades		$195,141
Visiting Faculty Member	TBD	Fisheries		$0
	A. Total Senior Personnel			**$1,012,919**
B. Other Personnel:		**(full time = 174 hours per month)**		
Public Information Officer	Bailey		NR	$100,203
Academic Recruiter	Murra		NR	$79,167
Juneau Facility Manager (Range 79)	TBD		NR	$94,494
	B. Total Other Personnel Salaries			**273864**
C. Graduate Assistant Salaries:				
Masters Graduate Student		Grad Student	GN/GT	$35,517
Masters Graduate Student		Grad Student	GN/GT	$35,517
PhD Graduate Student		Grad Student	GN/GT	$41,578
	B. Total Graduate Assistant Salaries			**$112,612**
	Total Salaries and Benefits (A+B+C)			**$1,399,395**
F. Other/Contractual/Services				
ANSEP Partnership Funds				$0
VTN Equipment				$0
Laboratory Equipment				$0
Building Modifications				$0
Seminar Speaker Travel				$16,000
Faculty Travel				$20,000
Student Travel				$35,000
Furniture				$0
Moving Expenses				$0
Faculty Start Up Costs				$0
Faculty Recruiting Costs				$0
Student Scholarships				$80,000
Graduate Student Tuition				$35,562
Equipment for Juneau Fisheries Facility				$0
Fisheries Excellecne Committee Expenses				$0
Student Computers				$15,000
	F. Total Contractual/ Services			**$201,562**
I. Total Direct Costs (A-I)				**$1,600,957**
K. Base				**$1,600,957**
L. Total Indirect Costs (F&A)	**2 MTDC**			**$0**
	TOTAL UAF 2012 BUDGET			**$1,600,957**

Appendix A: Letter from Diane Kaplan to Denis Wiesenburg

Rasmuson file

SCHOOL OF FISHERIES AND OCEAN SCIENCES
JUL 31 2006
Office of the Dean

RASMUSON FOUNDATION

301 W. Northern Lights Blvd.
Suite 400
Anchorage, AK 99503

907.297.2700 *tel*
907.297.2770 *fax*
877.366.2700 *toll-free in Alaska*
rasmusonfdn@rasmuson.org *email*
www.rasmuson.org

July 26, 2006

Dean Denis Wiesenburg
School of Fisheries and Ocean Science - University of Alaska Fairbanks
245 O'Neill Bldg.
PO Box 757220
Fairbanks, AK 99775-7220

RE: Follow-up from the July 6 meeting

Dear Dean Wiesenburg:

Thank you for your continued efforts to strengthen the proposal to reinvigorate the undergraduate fisheries program offered through the School of Fisheries and Ocean Science at the University of Alaska Fairbanks.

Here are suggestions made by participants in our July 6th meeting in terms of strengthening the program and proposal:

- Additional research is needed to identify future workforce needs for the industry in the public and private sectors, along with educational requirements for each position. Development of curricula and identification of new faculty positions should follow the collection and analysis of this data. This might take the form of a framework that maps out the potential employment opportunities or career pathways for students and the curriculum and experience required to get there.
- Performance Measures – It is essential that UAF articulate specific performance measures that will help gauge the success of this project over 1, 3, 5, 10, and 20 years.
- A revised and updated timeline is needed.
- A ten-year business plan that includes a funding schedule and anticipated funders is needed.
- Internship Opportunities – There was a great deal of interest and enthusiasm around this aspect of the undergraduate program, particularly since the experiences gained and relationships built through an internship have many benefits – both for the students and the University. It would be great to see additional work to galvanize some of the relationships with the CDQ programs and representatives from the fisheries sector through MOAs.

- ANSEP Program – With the success of the ANSEP program and model, there appears to be a prime opportunity for a partnership. We would like to see some additional detail on the structure of this relationship.
- Minor Degrees – Additional research on identifying potential minor degree programs for B.A. Fisheries students is needed. In addition to those outlined in the draft, there may be opportunity to explore minor degree options focused on Public Policy, Education, Law, and Environmental Science. I am sure there are others that could be included in the list.
- There is a need to define, formalize, and strengthen the relationship with UAS and Chancellor John Pugh.

Thank you again for your efforts. I am pleased to see the progress to date. It is evident that you have made great strides in incorporating the comments from the members of the Fisheries Excellence Committee and Andy Rosenberg.

As I mentioned, please let me know if it would be advantageous for the Rasmuson Foundation to invest some planning funds at this stage towards research and development.

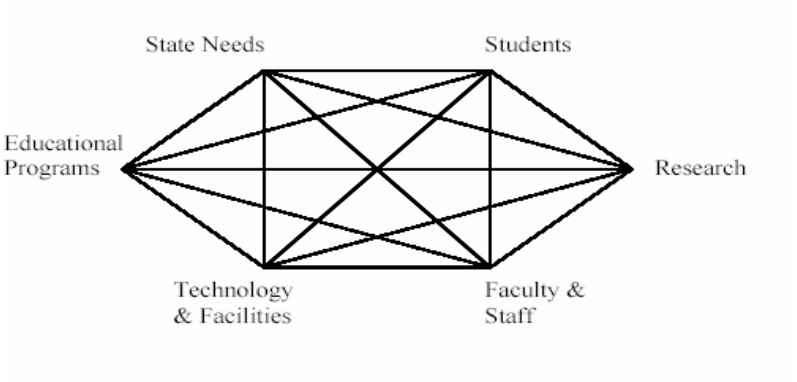
Sincerely,

Diane Kaplan
President

CC: Ed Rasmuson, Chairman, Rasmuson Foundation
President Mark Hamilton, University of Alaska
Chancellor Steve Jones, University of Alaska Fairbanks
Andy Rosenberg, University of New Hampshire
Bill Smoker, UAF Fisheries Division

Appendix B: UA Board of Regents Form for New Degree Programs

Questions to Answer for New Degree Program



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

*Who promoted the development of the program?
*What process was followed in development of program (including internal and external consultation)?
*Impact on existing programs and units across MAU and system, including GERs.

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

*Information describing program need and why existing programs in UA system are not able to meet it.

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

Describe **Research** opportunities:

Describe Fiscal Plan for development and implementation:

*Identify funding requirement, sources and plan to generate revenue and meet identified costs to include:

- ***Indirect costs to other units** (e.g. GERs, distance delivery)
- ***Faculty and Staff**
- ***Technology, Facilities** and Equipment

Appendix C: Workforce Assessment Questionnaire Form and Results

University of Alaska Fairbanks
School of Fisheries and Ocean Sciences

Undergraduate Fisheries Degree
Program Design Survey
August 2006

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 business change, UAF needs your help in evolving education programs which support Alaska's fishing and seafood sector.

Part One: Current Workforce

First, 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	
Educator	
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				
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				
Navigational/Electronic 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	Graduate degree	Professional certificate	Vocational certificate	On-the-job training
Accountant							
Bookkeeper							
Operations Manager							
Sales							
Marketing							
Biological Research							
Socio-economic research							
Economist							
QA/QC							
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							
Navigational/Electronic Specialist							
Refrigeration Technician							

	High School/GED	Associate degree	B.S in Fisheries	Graduate degree	Professional certificate	Vocational certificate	On-the-job training
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 BA Degree

UAF's undergraduate Bachelor of Science (BS) 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 (BA) 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 may emphasize fisheries/seafood business, economics, marine policy and sociology/anthropology, and,
- an industry internship/independent study component

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

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

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

Part Three: Undergraduate 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

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?

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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
UAF School of Fisheries and Ocean Sciences

Results Summary

Export... View Detail >>

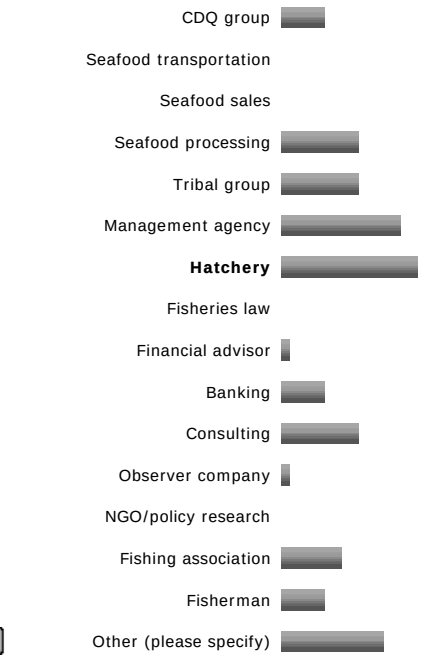
Filter Results

To analyze a subset of your data, you can create one or more filters.

Add Filter... **Total:** 56
Visible: 56

2. Part One: Current Workforce

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



	Response Percent	Response Total
CDQ group	5.6%	3
Seafood transportation	0%	0
Seafood sales	0%	0
Seafood processing	9.3%	5
Tribal group	9.3%	5
Management agency	14.8%	8
Hatchery	**16.7%**	**9**
Fisheries law	0%	0
Financial advisor	1.9%	1
Banking	5.6%	3
Consulting	9.3%	5
Observer company	1.9%	1
NGO/policy research	0%	0
Fishing association	7.4%	4
Fisherman	5.6%	3
View Other (please specify)	13%	7
Total Respondents		**54**
(skipped this question)		**2**

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	more than 20	Response Total
Accountant	**86% (18)**	14% (3)	0% (0)	0% (0)	**21**
Bookkeeper	**100% (21)**	0% (0)	0% (0)	0% (0)	**21**
Operations Manager	**90% (18)**	10% (2)	0% (0)	0% (0)	**20**
Sales	**100% (11)**	0% (0)	0% (0)	0% (0)	**11**
Marketing	**91% (10)**	9% (1)	0% (0)	0% (0)	**11**
Biological Research	**60% (9)**	13% (2)	7% (1)	20% (3)	**15**
Socio-economic research	**100% (14)**	0% (0)	0% (0)	0% (0)	**14**
Economist	**100% (11)**	0% (0)	0% (0)	0% (0)	**11**
QA/QC	**75% (6)**	25% (2)	0% (0)	0% (0)	**8**
Floor manager	**56% (5)**	44% (4)	0% (0)	0% (0)	**9**
Processing labor	17% (2)	0% (0)	17% (2)	**67% (8)**	**12**
Communications/PR	**92% (11)**	8% (1)	0% (0)	0% (0)	**12**
Logistics	**100% (8)**	0% (0)	0% (0)	0% (0)	**8**
Law	**62% (5)**	25% (2)	12% (1)	0% (0)	**8**

Harvester	23% (3)	23% (3)	**31% (4)**	23% (3)	**13**
Deckhand	**56% (9)**	12% (2)	6% (1)	25% (4)	**16**
Policy development	**60% (9)**	33% (5)	7% (1)	0% (0)	**15**
Regulator	**75% (6)**	12% (1)	0% (0)	12% (1)	**8**
Enforcement	**71% (5)**	0% (0)	14% (1)	14% (1)	**7**
Banking/Loan Officer	**86% (6)**	14% (1)	0% (0)	0% (0)	**7**
Fisheries Management	31% (5)	**38% (6)**	6% (1)	25% (4)	**16**
Company Management	**64% (9)**	21% (3)	14% (2)	0% (0)	**14**
Fish Culturalist	**62% (10)**	19% (3)	6% (1)	12% (2)	**16**
Fisheries Biologist	**55% (12)**	32% (7)	0% (0)	14% (3)	**22**
Fisheries Biometrician	**62% (5)**	12% (1)	12% (1)	12% (1)	**8**
Marine Engine Mechanic	**75% (6)**	25% (2)	0% (0)	0% (0)	**8**
Health/Science Officers	**100% (4)**	0% (0)	0% (0)	0% (0)	**4**
Captain/Mate	**79% (11)**	7% (1)	7% (1)	7% (1)	**14**
Navigational/Electronic Specialist	**83% (5)**	17% (1)	0% (0)	0% (0)	**6**
Refrigeration Technician	**100% (7)**	0% (0)	0% (0)	0% (0)	**7**
Fisheries Field Research Technician	**52% (11)**	19% (4)	14% (3)	14% (3)	**21**
Observer	**67% (6)**	0% (0)	22% (2)	11% (1)	**9**
Other	**82% (9)**	9% (1)	9% (1)	0% (0)	**11**
				Total Respondents	**53**
				(skipped this question)	**3**

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	Response Total
Accountant	18% (3)	24% (4)	0% (0)	**47% (8)**	0% (0)	6% (1)	0% (0)	6% (1)	**17**
Bookkeeper	**50% (9)**	22% (4)	0% (0)	11% (2)	0% (0)	0% (0)	6% (1)	11% (2)	**18**
Operations Manager	0% (0)	19% (3)	**38% (6)**	12% (2)	0% (0)	0% (0)	0% (0)	31% (5)	**16**
Sales	14% (1)	14% (1)	0% (0)	**43% (3)**	14% (1)	0% (0)	0% (0)	14% (1)	**7**
Marketing	20% (1)	0% (0)	0% (0)	**60% (3)**	0% (0)	0% (0)	0% (0)	20% (1)	**5**
Biological Research	6% (1)	0% (0)	**31% (5)**	19% (3)	**31% (5)**	0% (0)	0% (0)	12% (2)	**16**
Socio-economic research	0% (0)	0% (0)	0% (0)	25% (2)	**62% (5)**	0% (0)	0% (0)	12% (1)	**8**
Economist	0% (0)	0% (0)	11% (1)	11% (1)	**67% (6)**	0% (0)	0% (0)	11% (1)	**9**
QA/QC	0% (0)	0% (0)	0% (0)	20% (1)	0% (0)	0% (0)	20% (1)	**60% (3)**	**5**
Floor manager	17% (1)	17% (1)	0% (0)	0% (0)	17% (1)	0% (0)	17% (1)	**33% (2)**	**6**
Processing labor	40% (4)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	**60% (6)**	**10**
Communications/PR	10% (1)	0% (0)	10% (1)	**60% (6)**	0% (0)	0% (0)	0% (0)	20% (2)	**10**
Logistics	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	**100% (3)**	**3**
Law	0% (0)	0% (0)	**40% (2)**	0% (0)	**40% (2)**	0% (0)	0% (0)	20% (1)	**5**
Harvester	38% (3)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	**62% (5)**	**8**
Deckhand	31% (4)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	**69% (9)**	**13**
Policy development	7% (1)	7% (1)	13% (2)	20% (3)	**40% (6)**	0% (0)	0% (0)	13% (2)	**15**
Regulator	0% (0)	0% (0)	**25% (1)**	0% (0)	**25% (1)**	**25% (1)**	0% (0)	**25% (1)**	**4**
Enforcement	0% (0)	0% (0)	**50% (2)**	25% (1)	0% (0)	0% (0)	0% (0)	25% (1)	**4**
Banking/Loan Officer	0% (0)	**50% (2)**	0% (0)	25% (1)	0% (0)	0% (0)	0% (0)	25% (1)	**4**
Fisheries Management	6% (1)	6% (1)	28% (5)	11% (2)	**33% (6)**	0% (0)	0% (0)	17% (3)	**18**
Company Management	0% (0)	0% (0)	8% (1)	33% (4)	**42% (5)**	0% (0)	0% (0)	17% (2)	**12**
Fish Culturalist	7% (1)	14% (2)	**43% (6)**	7% (1)	0% (0)	0% (0)	0% (0)	29% (4)	**14**

Fisheries Biologist	0% (0)	5% (1)	**68% (15)**	0% (0)	18% (4)	0% (0)	0% (0)	9% (2)	**22**
Fisheries Biometrician	0% (0)	11% (1)	**44% (4)**	0% (0)	33% (3)	0% (0)	0% (0)	11% (1)	**9**
Marine Engine Mechanic	17% (1)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	17% (1)	**67% (4)**	**6**
Health/Science Officers	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	**100% (1)**	**1**
Captain/Mate	**40% (4)**	0% (0)	0% (0)	0% (0)	0% (0)	20% (2)	0% (0)	**40% (4)**	**10**
Navigational/Electronic Specialist	**50% (1)**	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	**50% (1)**	**2**
Refrigeration Technician	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	20% (1)	20% (1)	**60% (3)**	**5**
Fisheries Field Research Technician	**53% (9)**	12% (2)	0% (0)	12% (2)	0% (0)	0% (0)	0% (0)	24% (4)	**17**
Observer	0% (0)	0% (0)	**38% (3)**	**38% (3)**	0% (0)	0% (0)	0% (0)	25% (2)	**8**
								Total Respondents	**49**
								(skipped this question)	**7**

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.

View **Total Respondents** **49**

(skipped this question) **7**

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

View **Total Respondents** **45**

(skipped this question) **11**

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

6. Based on this general outline, do you think this degree would serve future needs of the Alaska fishing/seafood industry?

		Response Percent	Response Total
	Yes	**88.7%**	**47**
	No	7.5%	4
View	Comments:	62.3%	33
		Total Respondents	**53**
		(skipped this question)	**3**

7. Do you think there would be demand for employees with this broader fisheries degree among industry employers?

		Response Percent	Response Total
	Yes	**82%**	**41**
	No	12%	6
View	Comments:	44%	22
		Total Respondents	**50**
		(skipped this question)	**6**

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

View **Total Respondents** **39**

(skipped this question) **17**

4. Part Three: Undergraduate Internships

9. Has your company/organization supported any college student internships in the last three years?

	Response Percent	Response Total

Yes	**51.9%**	**27**
No	48.1%	25
Total Respondents		**52**
(skipped this question)		**4**

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

View	**Total Respondents**	**26**
	(skipped this question)	**30**

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

	Response Percent	Response Total
Yes	**68%**	**34**
No	18%	9
Not sure	14%	7
Total Respondents		**50**
(skipped this question)		**6**

5. Final thoughts

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

View	**Total Respondents**	**24**
	(skipped this question)	**32**

6. Final page

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

		Response Percent	Response Total
View	**Name:**	**100%**	**51**
View	E-mail:	92.2%	47
	Total Respondents		**51**
	(skipped this question)		**5**

Appendix D: Internships in the Undergraduate Fisheries Program

The University of Alaska Fairbanks Career Services Guide defines an internship as "a planned, learning experience that provides an opportunity to gain practical, on-the-job training in a field of interest. Internships serve as bridges between the classroom and the world of work."

Benefits include:

- valuable, practical experience
- individualized instruction and on-the-job training
- applying classroom theories in the real world
- networking with people in your career field
- preparation for post-graduation employment
- increased employability for graduates.

In Alaska, we have a wealth of opportunities for professional internships in the field of fisheries science, fisheries management, seafood science or business. A professional internship would be a requirement for undergraduates majoring in fisheries. The staff and faculty of SFOS would work with a student to define a meaningful internship and mentor the student through it.

Potential Internships for undergraduate fisheries students

(many of these are ongoing, some would need to be encouraged by UAF)

Government Agencies

- **US Fish and Wildlife Service**
  http://alaska.fws.gov/volunteer/pdf/Fish_%20Intern.pdf
  USFWS internships in refuges

- **NOAA Fisheries: Alaska Fisheries Science Center**
  http://www.afsc.noaa.gov/internships/overview.htm

- **Alaska Department of Fish and Game**
  http://www.wildlifenews.alaska.gov/index.cfm?adfg=wildlife_news.view_article&articles_id=78&issue_id=19
  ADF&G internships with Sport Fish Division
  College Intern I, Range 8, Step A - $12.79/hour

- **US Forest Service**
  http://www.fs.fed.us/

- **USGS**
  http://www.absc.usgs.gov/research/Fisheries/Lake_Clark/intern.htm
  Native Alaskan Intern Program, Dr. Carol Ann Woody, USGS

- **North Pacific Fishery Management Council**
  http://www.fakr.noaa.gov/npfmc/

- **Student Career Employment Program (SCEP)**
  National environmental internship clearinghouse used by federal resource agencies such as the National Park Service, BLM, USFW, USFS, and USGS.

Alaska Native Organizations

US Fish and Wildlife Service Fisheries Partners Program
USWFS Office of Subsistence Management has partnerships with the following Native non-profits to support fisheries biologists and a summer internship program for college students. http://alaska.fws.gov/asm/fisdetails.cfm?choose=3
These internships are currently available for credit as either Fish 195 or Fish 395: Special Topics in Fisheries

- **Association of Village Partnerships (AVCP)**
  Fisheries and Forestry Resources Department
  Kuskokwim River Fisheries Internship
  (3 hired this summer, credit available via Fish 195 or Fish 395)
  $17.21/hour for 10-12 weeks

- **Bristol Bay Native Association**
  $13-$15/hour, June-August

- **Kuskokwim Native Association**
- **Native Village of Eyak**
- **Tanana Chiefs Conference**
- **Eyak Preservation Council**
- **First Alaskans Institute**

Fishing Organizations

- **CDQ Programs**
  The CDQ programs offer paid internships in areas including office management, fisheries education, and fisheries quota management.
  APICDA
  Yukon Delta

Private Non-Profit Salmon Hatchery Corporations

Alaska's salmon fishery enhancement corporations comprise the single largest sector of its agriculture industry, producing both a significant portion of the common property salmon harvest and a harvest that pays their costs of operation. They have a significant need for seasonal technical workers and a continuing need for technical workforce development and have expressed a willingness to cooperate in student internships.

- Prince William Sound Aquaculture Corporation, Cordova
  http://www.pwsac.com/
- Northern Southeast Regional Aquaculture Corporation, Sitka
  http://www.nsraa.org/
- Southern Southeast Regional Aquaculture Corporation, Ketchikan
  http://www.ssraa.org/
- Cook Inlet Aquaculture Association, Soldotna
  http://www.ciaanet.org/
- Kodiak Regional Aquaculture Association, Kodiak
- Douglas Island Pink and Chum, Juneau
  http://www.dipac.net/
- Valdez Fisheries Development Association, Valdez

Private organizations

- Alaska Conservation Foundation
  http://www.akcf.org/_pages/programs_amp_initiatives/conservation_internship_program.php

- **Hutton Junior Fisheries Biology Program**
  Funded by the American Fisheries Society, the Hutton program pairs a student with a mentor in their community for an 8-week long internship during the summer. The student receives a $3,000 scholarship from the American Fisheries Society for participating. (This summer, the Norton Sound Research and Restoration Initiative supplemented this internship with funds for travel and supplies). This was used for a high school student from Unalakleet.

- Alaska SeaLife Center interns
  http://www.alaskasealife.org/New/about-ASLC/internship-program.php

Seafood Industry internships

- Fish 460: Food Science and Technology Internship, available through FITC in Kodiak

- Peter Pan Seafoods
  (via personal communication, Norm Van Vactor, Bristol Bay manager)

- NRM 102: Practicum in Natural Resources Management

- CDQ groups also sponsor internships in their programs

Internship credits currently available at SFOS and other UAF units

- Fish 195, Fish 395: Special Topics in Fisheries, Fisheries Partners Interns

- Fish 460: Food Science and Technology Internship, available through FITC in Kodiak
- NRM 102: Practicum in Natural Resources Management
- Fish 450: Practicum in Fisheries: Fisheries Observer Program (a BS or BA is required by the observer programs to participate)

University of Alaska Southeast

Internship Contract Proposal[1]

(Fill in Appropriate Information, expanding as required.)

Date: _____

Student: _____ ID#: _____

_____(mailing)

_____(address)

_____(telephone #)

Organization & Supervisor:_____

_____(mailing)

_____(address)

_____(telephone #)

A. Title: _____ _____
Discipline, Number, Title Credits

B. Description[2]:

C. Objectives:

D. Activities and Methods:

E. Supervisor's Reporting Schedule to Faculty Sponsor & Faculty Visitation Schedule[3]**:**

F. Evaluation Method:

G. Clock Hours total and number of hours to serve per week[4]**:**

_____ _____

Student Date Organization Sponsor Date

_____

Regular Faculty Sponsor Date

[1]Distribution: original, academic unit; copies to student, organization sponsor, faculty sponsor.

[2]Description: Student interns may not be assigned such duties as making coffee, making "runs" for food, or clean-up activities except as these activities may be shared among other employees of the organization. Such shared duties must be enumerated. Student interns will not be required to undertake tasks for others that may be said to be of a personal nature not directly related to the performance of organizational activities, such as picking up "dry cleaning" or preparing personal correspondence. All activities must be related to the operation of the organization's activities and related to learning.

[3]Reporting and Visitation: A calendar should include (1) an organization sponsor's reporting schedule (once a month minimum), (2) a faculty visitation schedule (once each two months minimum), (3) the date for conclusion of activities, (4) the date for a final report and overall evaluation. Reports should address the degree to which the intern is meeting or has met the "objectives" and "activities and methods" laid out in this contract. The Organization Sponsor agrees to undertake these reports in a timely manner as the intern cannot receive credit for internship activity without them.

[4]1 credit: 50 hours; 2 credits: 100; 3 credits: 150....

Appendix E: Current Undergraduate Fisheries Courses

From 2005-2006 UAF Catalog

Fisheries

Fisheries courses are offered at both the Fairbanks Campus and at the UAF Juneau Center, School of Fisheries and Ocean Science. Those offered only at Fairbanks are identified by the initial F following the course number. Courses offered only at Juneau are identified by the initial J following the course number. The frequency of offering is identified by location for those courses offered at both Fairbanks and Juneau.

FISH 101 (3 Credits) Introduction to Fisheries.
Survey of the values, habitats, biology, ecology and management of fishes with particular reference to Alaskan fisheries and issues. (3+0) Offered Fairbanks, Spring; Offered Juneau, Alternate Fall; Instructor: Dr. Margaret Merritt-Lund

FISH 261-F (3 Credits) Introduction to Seafood Science and Nutrition
Application of scientific and engineering principles in the harvesting, processing, preservation and marketing of Alaska's rich fisheries resources. For sophomore-level natural sciences/environmental studies students. (Prerequisites: CHEM 105 or BIOL 105X or permission of instructor.) (3+0) Offered Fall; Instructors: Not taught since before Spring 1999

FISH 336-J (3 Credits) Introduction to Aquaculture
The contribution of Alaska's aquaculture industries, salmon ocean ranching, shellfish mariculture and kelp mariculture to the world's increasingly important aquaculture production. Survey of worldwide production, introduction to production systems and familiarization with Alaskan systems. Team taught by SFOS specialists and featuring invited lecturers, laboratory demonstrations and field trips. (Prerequisites: BIOL 106X. Next offered: 2006--07.) (3+0) Offered Alternate Spring; Instructors: Not taught since before Spring 1999

FISH 381 (3 Credits) Biology of Commercially Important Salmonid Fishes
Biology, life history and ecology of economically valuable salmonids. Management of salmonid fisheries. (Prerequisite: BIOL 106X.) (3+0) Offered As Demand Warrants; Instructors: Not taught since before Spring 1999

FISH 382 (4 Credits) Biology of Commercially Important Marine Fishes
Review of the major marine fish resources of Alaska. Taxonomy, distribution, life history and ecological relationships of marine fishes, with emphasis on demersal fishes, early life history and the effects of fisheries on stocks. (Prerequisite: BIOL 106X.) (3+0) Offered As Demand Warrants; Instructors: Not taught since before Spring 1999

FISH 383 (4 Credits) Biology of Commercially Important Invertebrates
Topics include the taxonomy, morphology, physiology and ecology of commercially important invertebrates. History of the management and fishery for the major species presented. Emphasis on Alaskan species. (Prerequisite: BIOL 106X.) (3+3) Offered As Demand Warrants; Instructors: Not taught since before Spring 1999

FISH 388 (3 Credits) Marine and Freshwater Fishes of Alaska (n) (Cross-listed with BIOL 388)
Biology of the marine and freshwater fishes of Alaska including their evolutionary relationships, biogeography, life-history, ecology, behavior and importance to people. (Prerequisites: BIOL 105X and 106X or permission of instructor.) (3+0) Offered Alternate Spring; Instructors: Dr. Gordon Haas

FISH 400W (3 Credits) Fisheries Science (Cross-listed with NRM 400W)
The subject of fishery science is reviewed to reflect the emerging concept of a study area integrated over a broad sweep of disciplines: oceanography, limnology, marine biology, fish population dynamics, aquaculture, economics, processing, product quality and development and marketing. Demonstrates how such different subjects have feedback loops to one another and stresses the science fundamentals involved. (Prerequisites: ENGL 111X; ENGL 211X or ENGL 213X or permission of instructor; and one 200-level biology class. Co-requisite: STAT 200 [STAT 373-J].) (3+0) Offered Spring; Instructors: Dr. Margaret Merritt-Lund, Dr. Nick Hughes

FISH 401W,O/2 (3 Credits) Fisheries Management (Cross-listed with NRM 401W,O/2)
Principles, concepts and techniques of fisheries management in terms of their biological, economic, social and political aspects. Topics are stocking and introductions, habitat manipulation, sustainable yield, regulation, management organizations and their responsibilities. Examples of several fisheries are used to clarify concepts and practices. (Prerequisite: BIOL 271; COMM 131X or 141X; ENGL 111X; ENGL 211X or ENGL 213X or permission of instructor. Next offered Juneau: 2005--06.) (3+0) Offered Fairbanks Alternate Spring; Offered Juneau Alternate Fall; Instructors: Dr. Margaret Merritt-Lund, Dr. Nick Hughes

FISH 418-J (4 Credits) Renewable Resource Management Systems
Develops abilities to recognize, process and apply critical information in the management of renewable resources by examples from Alaskan fisheries. The computer as a primary tool of resource management. (Prerequisite: STAT 200 [STAT 373-J]. STAT 401 recommended. Next offered: 2005--06.) (4+0) Offered Alternate Fall; Instructors: Not taught since before Spring 1999

FISH 420-J (3 Credits) Modeling, Simulation and Ecological Theory

Introduction to formal models (mathematical, graphical and simulation) in fisheries and ecology. Nature and uses of modeling approaches; choice of assumptions; simulation techniques and model verification; examples and case histories (Prerequisites: MATH 200X, BIOL 271 (BIOL 281-J.) (3+0) Offered As Demand Warrants; Instructors: Not taught since before Spring 1999

FISH 421-J (4 Credits) Fisheries Population Dynamics
Review and analysis of the major quantitative techniques available for assessing and predicting the status of fish populations. Demonstration and use of field and laboratory techniques and model verification; examples and case histories. (Prerequisite: STAT 200 [STAT 373-J]. FISH 418 recommended. Next offered: 2005--06.) (4+0) Offered Alternate Spring; Instructors: Dr. Milo Adkison

FISH 427 (4 Credits) Ichthyology (n) (Cross-listed with BIOL 427)
Major groups of fishes, emphasizing fishes of northwestern North America. Classification structure, evolution, general biology and importance to man. (Prerequisites: BIOL 317. Next offered: 2005--06.) (3+3) Offered Alternate Spring; Instructors: Dr. Gordon Haas, Dr. Nicola Hillgruber

FISH 436-J (3 Credits) Salmon Culture
Biology and technology of artificial propagation of salmonids. Reproduction, embryology, growth, nutrition, genetics and pathology of salmonids in both extensive (sea ranching) and intensive rearing systems. Bioengineering of incubators, rearing containers, water diversion systems and other related topics. Laboratory exercises in measuring effects of environmental characteristics on development and growth of salmon. (Prerequisites: BIOL 222 [BIOL 209-J], CHEM 106X, FISH 381. Next offered: 2005--06.); Instructor: Dr. William Smoker

FISH 445-J (3 Credits) Sampling Methods in Fisheries
A review of standard and specialized sampling techniques in aquatic habitats. Basic sampling theory and statistical consideration, demonstrations, use of field laboratory techniques, shipboard sampling. (Prerequisite: STAT 200 [STAT 373-J]. Next offered: 2005--06.) (2+2) Offered Alternate Spring; Instructors: Not taught since before Spring 1999

FISH 450 (3 Credits) Practicum in Fisheries: Fisheries Observer Program
Receive practical experience as a fisheries biologist onboard an Alaska commercial fishing vessel doing independent work at sea as an agent for the National Marine Fisheries Service or the Alaska Department of Fish and Game. Simultaneous to credit, the student/observer would be under contract and receive reimbursement for deployment. May be repeated for additional credit during different deployments as observer. (Prerequisites: STAT 200 or permission of instructor.) (0+variable) Offered As Demand

Warrants; Instructors: Joe Chaszar, Dr. Paula Cullenberg

FISH 460-K 3-- (6 Credits) Food Science and Technology Internship (n) (Cross-listed with FSN 460-K)

A combination of traditional and industrial training opportunities. Assigned required readings and discussion of appropriate topics in food science and technology. Information applied during hands-on experience in a food processing plant. Discussion includes fundamental information and solutions to industrial problems. Faculty mentor assigned to each intern. Required written evaluation of internship. 30 hours in-plant work experience for 12--24 weeks. (Prerequisites: 16 credits in natural sciences, MATH 200X or MATH 272X or permission of instructor.) Course offered only in Kodiak.
(1+0+3) Offered As Demand Warrants; Instructor: Dr. Alexandra Oliveira.

Appendix F: Potential New Courses to be Developed

- Ecosystem-based Fisheries Management
- Fisheries Economics
- Decision-making Techniques in Fisheries Management
- Marine Policy
- The Politics of Ecosystem-Based Management
- Seafood Marketing
- Applied Fishery Science
- Subsistence in Alaska
- Traditional and Ecological Knowledge
- Fishing-Dependent Community Social Science
- Alaska's Fishing Industry
- Seafood Safety
- Fishery Development
- Aquaculture in Alaska
- Industrial Fisheries

Some typical course descriptions are given below and others will be developed as required to prepare the B.A. in Fisheries for approval.

Ecosystem-Based Fisheries Management – This course is intended to: (1) introduce students to ecosystem-based management, the current management paradigm established by NOAA for marine ecosystems (2) provide students with an overview of the ecological, social and economic principles that provide the basis for ecosystem-based management; (3) help students develop the skills necessary to understand how general scientific principles are translated into management plans for ecological systems, and (4) to develop critical thinking and synthesis skills in order to evaluate the adequacy of existing land management plans.

Fisheries Economics – A classical look at fisheries economics with such topics of open-access and the race for fish, MSY vs. MEY, regulations of fishing (limited entry, gear and seasonal restrictions, Coops, ITQs, CDQs) etc. Also covered will be the cost of fishing, bycatch problems and highgrading. Additionally, revenue fluctuations and uncertainty, commercial, recreational and subsistence fisheries, aquaculture, etc.

Decision-Making Techniques in Fisheries Management – Management of fisheries is a complex decision-making process where there conflicting political, economic, social and biological objectives among the interests and agencies responsible for oversight and management of fish and their bargaining, compromise and building coalitions are used to reach agreements. There is a need to integrate scientific and socioeconomic components into comprehensive approaches for sustaining fish populations and opportunities for harvesting. However, most decision makers tasked with addressing these issues need guidance in techniques that allow consideration of multiple viewpoints, blend sources of information, and facilitate prioritization of options. Systems and operations approaches to group planning and problem solving are useful tools for facilitating solutions to complex problems. Incremental planning seeks a reasonable improvement the status quo and is the most prevalent form of planning used by government. The purpose of this

course is to instruct students and fishery professionals in decision-making techniques for fisheries management and research planning. The techniques will include systems (Saaty 1999) and operations (Hillier and Lieberman 1990) approaches, as well as incremental planning (Lindblom and Woodhouse). Specific instruction in strategic planning, group facilitation and public participation in the decision-making process will be provided. Techniques to evaluate current hypothetical fisheries management and policy will be a component of the curriculum.

Marine Policy – Economic overview of the marine environment; interactions/conflicts surrounding this multiple-use resource. Topics covered would be economic analysis of ecosystem management, HAPC, ocean pollution, environmental problems associated with fishing (such as seabird avoidance, bycatch issues, fishing off corals and sponges, Steller sea lions as a case study etc.) Special consideration would be given to decisions made by the Alaska Board of Fish and the North Pacific Fishery Council. Student visits would be made to either the Board of Fish or the NPFMC meetings with a project arising from the visits.

The Politics of Marine Ecosystem-Based Management – Political considerations are an essential component of marine ecosystem-based management, yet its socio-political context has been largely ignored by those studying and writing on the subject. This course investigates efforts to restore and maintain the health of marine ecosystems. Traces the evolution of the ecosystem-based approach and examines how it has been implemented during the past two decades. Concludes by looking at prominent experiments in ecosystem-based management to see whether and how such initiatives provide genuine environmental protection. Text: The Politics of Ecosystem Management by Hanna J Cortner and Margaret A Moote (1999).

Seafood Marketing – This course would cover the basics of seafood markets and help the students understand why revenues fluctuate so widely among some species. This would prepare students when making investment decisions. Also covered would be substitute goods, quality of product, opportunities for direct marketing, and possible new emerging markets (such as Spiny dogfish).

Applied Fishery Science – Diverse aspects of fish and fisheries, fish and fish food, fish aquaculture, integrated fish farming, operation methods of fishing gear, and other topics.

Appendix G: Letter from ANSEP Director Schroeder to Dean Wiesenburg

UNIVERSITY of ALASKA ANCHORAGE

School of Engineering
3211 Providence Drive, Anchorage, AK 99508

ANSEP
ALASKA NATIVE SCIENCE & ENGINEERING PROGRAM
Building a National Model for Excellence in Native American Higher Education Programs

October 19, 2006

Dr. Denis A. Wiesenburg
Dean
School of Fisheries and Ocean Sciences

Re: SFOS and ANSEP

Dennis,

This note is to memorialize conversations that we have had over the past months regarding the School of Fisheries and Ocean Science (SFOS) initiative to increase the bachelor degree production of Alaska Native students within the UAF SFOS.

In working with SFOS our objective is to effect a systemic change in the hiring patterns of Alaska Natives in the fisheries and related biological sciences by increasing the number of individuals on a professional career path to leadership within the field. Pending receipt of grant funding through the Rasmuson Foundation in support of this effort over the next 5 years, SFOS will provide $50,000 annually to be expended as the ANSEP Executive Director or the Director's designee deems appropriate to meet the goals of our program.

We will coordinate our efforts. We both understand the importance of maintaining the integrity of the ANSEP model. You will provide us with an opportunity to review any publications and/or marketing materials that refer to ANSEP prior to publication and distribution.

This is a very good opportunity to extend the reach of ANSEP to an additional discipline.

Sincerely,

Herb Schroeder, PhD
ANSEP Executive Director
Associate Director and Professor of Engineering

Appendix H: Joint Declaration between UAS and UAF

Joint Declaration

"The University of Alaska Fairbanks (UAF) fisheries degree programs have always benefited from a strong, mutually-beneficial relationship with the University of Alaska Southeast (UAS). Our joint faculty arrangements have been extremely successful in delivering graduate education in Southeast Alaska. The expansion of the undergraduate fisheries program planned by UAF has significant benefits to UAS including the return of undergraduate fisheries students to Juneau. UAS faculty will work with UAF faculty in the development of the new curriculum to assure that the new fisheries curriculum and its courses can be coordinated with current and planned UAS courses in fisheries and other sciences. We agree that our two faculties working collaboratively can deliver a more effective fisheries program than either one individually. Therefore, we agree to expand our collaboration between the UAS and UAF faculty in the planning and implementation of this new program to achieve the best result for Alaska.

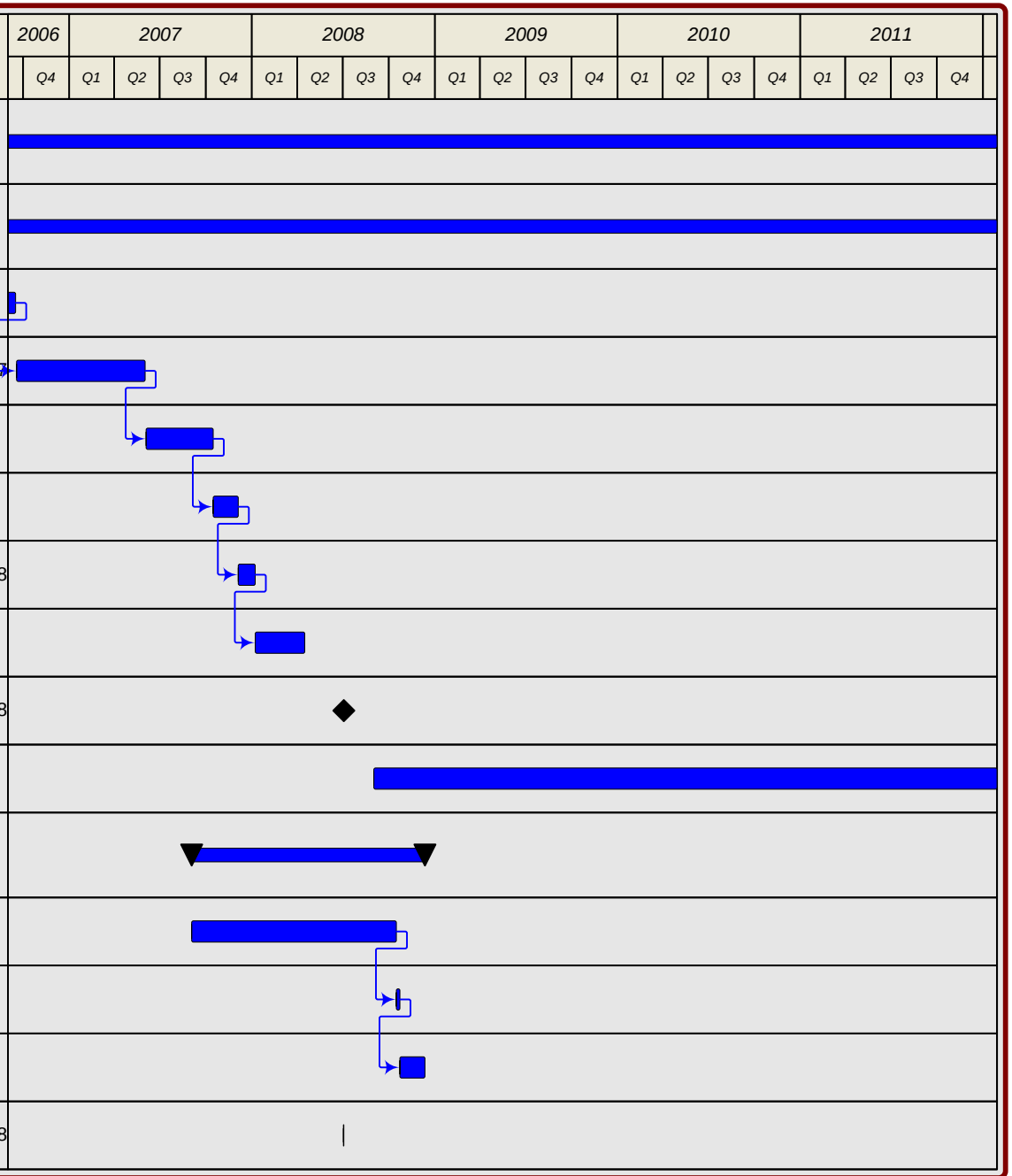
We are jointly and fully committed to implementing this new fisheries initiative."

Signed: Steve Jones, UAF Chancellor and John Pugh, UAS Chancellor

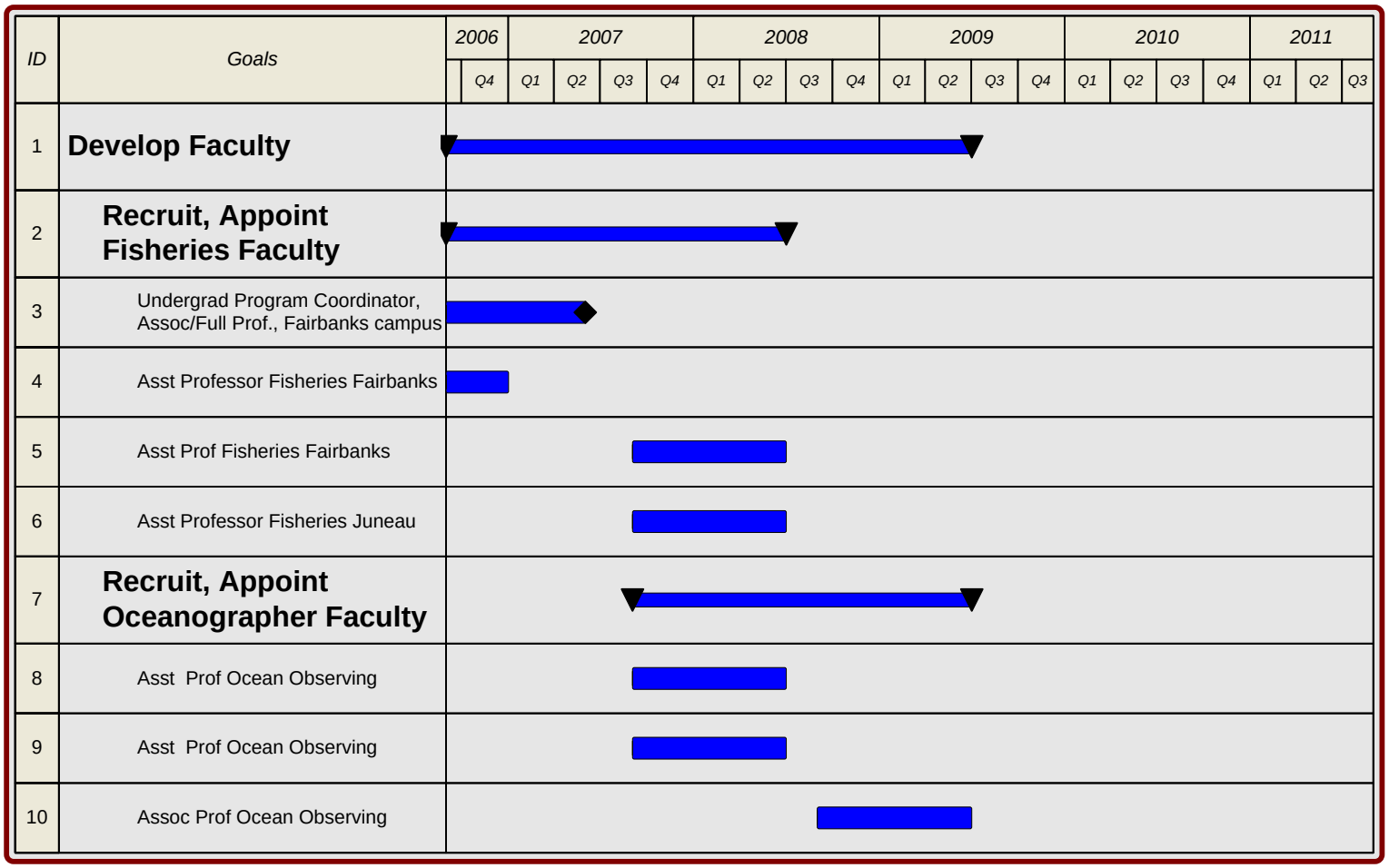
Dated: August 25, 2006

Appendix I: Timelines: Curriculum Development

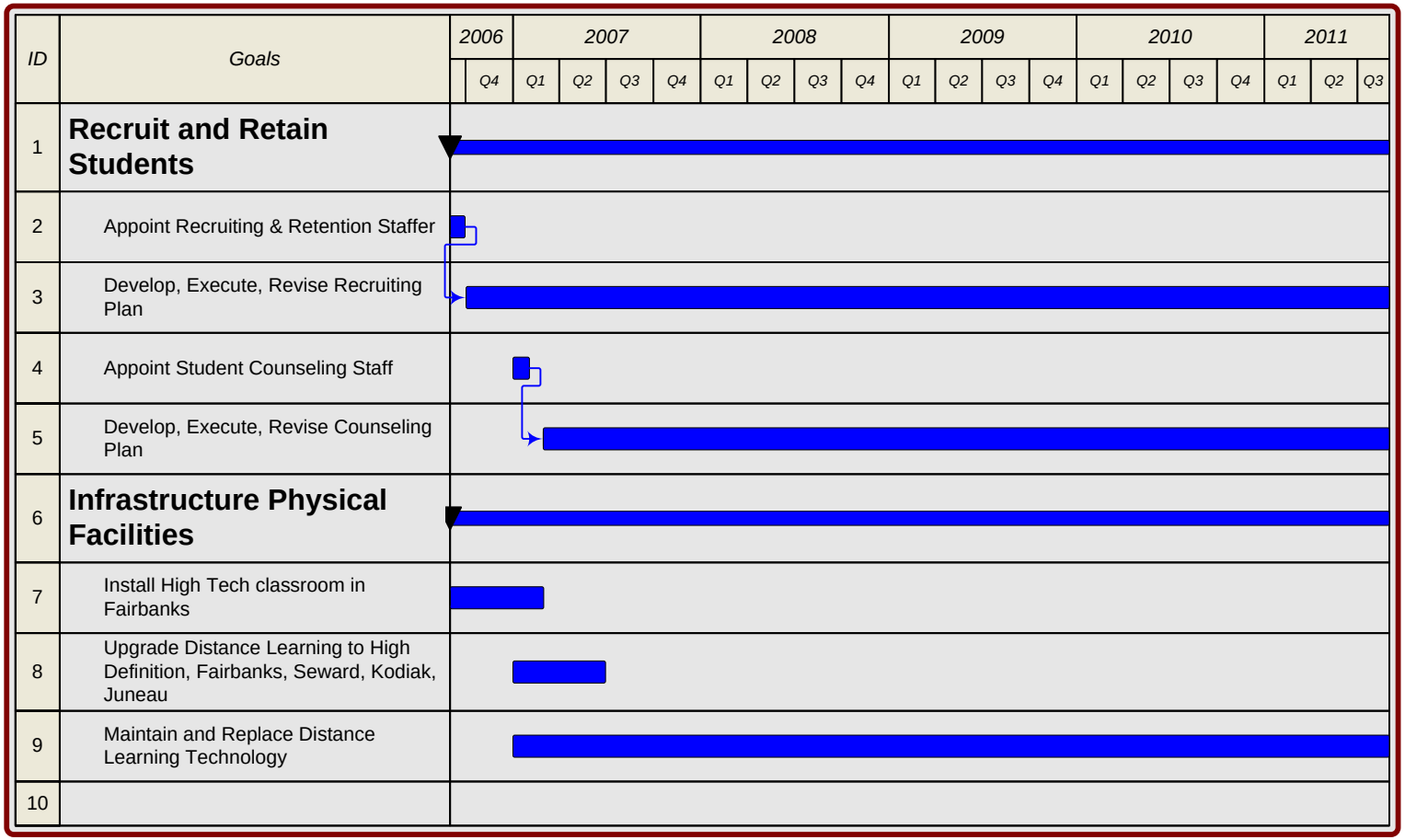
ID	Goals	Start	Finish
1	**New Curricula at Bachelor's Level**	**8/25/2006**	**8/30/2013**
2	**New Fisheries BA Curriculum**	**8/25/2006**	**8/30/2013**
3	Needs Assessment survey of industry, agencies, organizations	8/25/2006	9/15/2006
4	Faculty Defines curriculum, develops new courses, submits to Curriculum Committee	9/18/2006	6/1/2007
5	Fish Curriculum Committee reviews, submits to Faculty Senate	6/4/2007	10/15/2007
6	Senate Reviews, submits to Provost, Chancellor	10/16/2007	12/4/2007
7	Chancellor Reviews, submits to President, Board of Regents	12/5/2007	1/7/2008
8	Board of Regents review and approval	1/8/2008	4/15/2008
9	Publish in Catalog	7/2/2008	7/2/2008
10	Assess Outcomes, Revise Curriculum	9/1/2008	8/30/2013
11	**Undergrad Minor in Fisheries**	**9/3/2007**	**12/11/2008**
12	Faculty defines Minor, submits to Curriculum Committee	9/3/2007	10/15/2008
13	Curriculum Committee reviews, submits to Faculty Senate	10/16/2008	10/22/2008
14	Faculty Senate review and approval	10/23/2008	12/11/2008
15	Publish in Catalog	7/2/2008	7/2/2008



Appendix I: Timelines: Faculty Development



Appendix I: Timelines: Student Recruitment and Facilities Development



Appendix J: UAF $1,000,000 Budget Request

UAF Student Success
AK Legacy Jobs

3. Undergraduate Fisheries Program Expansion – *part of FY07 Request*
Department: School of Fisheries and Ocean Sciences (Denis Wiesenburg)
GF: $1,000,000.00 NGF/One Time: $0.00
PBB Link(s): High Demand Jobs, SCH, Research Expenditures, & Enrollment Mgmt. Planning

Overview and Support of UA Theme(s):
Alaskan Jobs and Research/IPY Activities - This request addresses the need to prepare Alaskans for jobs by educating and training students who can support the sustainability of Alaska's vast and healthy marine and freshwater resources and fill jobs needed to maintain Alaska's vibrant and economically vital fishing and seafood industries. The fishing industry is the largest employer in Alaska and it is undergoing many changes, including the rationalization of various fisheries, federal imposition of subsistence priority, and allocation of harvest to community development. Our academic programs must evolve to meet these changes. The maintenance of an ecologically healthy fishery, the continued growth of the Alaska economy, and the persistence of traditional subsistence use of our marine resources all require that we invest in the education of our fisheries experts. This request will improve results on two of UA's performance measures: increasing graduates for high demand careers, increasing external research funding, research expenditures, and enrollment management planning.

A. Purpose. The primary purpose of this request is to develop a new Bachelor of Arts (B.A.) degree in fisheries characterized by experiential learning, interdisciplinary classes, broad geographic availability to reach both rural and urban students in Alaska, and partnerships with government regulators, fishing and seafood industry representatives and other related groups. We anticipate expanding our undergraduate fisheries majors from 25 in FY06 to 50 in FY08 and 100 in FY10. The secondary reason for additional funding is increase our research capacity with new faculty to better meet state, federal and industry research needs. We anticipate new research funding from the National Oceanic and Atmospheric Administration, the Alaska Department of Fish and Game, and the fishing industry. Additionally, the number of graduate students in SFOS will increase by 14 or more to support both the teaching and research endeavor.

B. Effect on Performance Targets and Goals. *HDJDAs (3)* Impact through FY12 - Fisheries is a high demand job area. 71% of our fisheries graduates work in Alaska after graduation, with 37% working for the Alaska Department of Fish and Game. The number of fisheries graduates should increase from 2 to 6 per year beginning in FY09 and to 20 per year by FY12. *SCH (1)* Impact through FY12 – Will be realized through an increase of 75 fisheries majors which should add 900 SCH. *Research Expenditures (4)* Impact through FY12 - The seven new faculty members should generate over $1.4M per year in new research expenditures by FY12. *EM Planning (6)* Impact through FY12 –We will take a new direction in our recruiting by establishing a partnership with the Alaska Native Science Engineering Program. This new effort will expand opportunities for Alaska Natives and students from rural communities. We anticipate having at least ten Alaska Native students in the program by FY09.

C. Capacity. The new undergraduate program will be organized to allow students to take the first two years of study at any MAU and complete the final two years either in Fairbanks or Juneau. The strengths in fisheries at the UAF Juneau Center will be leveraged by interactions with UAS faculty in marine biology.

D. Program maturity is expected in Spring 2010. By that time the new fisheries B.A. degree will be in its second year, all new faculty will have been in place for two years, will be advising and teaching students, and will contribute significantly to the research expenditures of the MAU.

E. Efficiency and Productivity. The increase in student enrollment and SCH will be matched by an increase in faculty. Without the new faculty, we would not be able to deliver the new academic program. In addition to adding to the SCH, the new faculty will increase research productivity by $200K per FTE. We will increase efficiency through space enhancements at Lena Point, creating a new classroom in O'Neill, creating a fisheries teaching laboratory in AHRB and remodeling the O'Neill 214 classroom.

F. Budget Detail. The FY08 GF allocation will pay for approximately seven new faculty members ($770K) and will provide travel ($50K), equipment ($50K), graduate student stipends ($30K), and infrastructure support to include classroom modification ($100K) for the degree program. The Rasmuson Foundation will provide $1,000,000 NGF to match this request.

Appendix K: Letter from UA President Hamilton to Ed Rasmuson

Mark R. Hamilton, President
Phone: (907) 450-8000
Fax: (907) 450-8012
EMAIL: sypres@alaska.edu

UNIVERSITY of ALASKA
Many Traditions One Alaska

202 Butrovich Building
910 Yukon Drive
P.O. Box 755000
Fairbanks, AK 99775-5000

November 15, 2005

Mr. Ed Rasmuson
P. O. Box 196127
Anchorage, AK 99519-6127

Dear Ed:

I had a good, if brief, visit with Andy Rosenberg, and he assures me that Denis Wiesenburg's plans to build the UAF SFOS fisheries and oceanography program to world class status, with your generous support, is moving in the right direction. I have also met with Chancellor Steve Jones and Denis, and both promise me that they will exert every effort toward making the match and to responding to Andy's suggestions. Pending approval of the Rasmuson Foundation, they will be prepared to submit a formal proposal in June.

Since receiving your challenge, UAF has increased the SFOS annual base funding by $75K, and they will increase it an additional $50K this fiscal year. Assuming these increments count toward the match, I hereby assure you, as president of the University of Alaska, that we will provide the additional $875K/year for five years.

I will guarantee this pledge through the use of Natural Resource and privately donated funds. However, it is obviously desirable to raise as much of this match as possible from other sources; my development officers and I are working diligently with several corporations and foundations, and Denis tells me he is pursuing additional opportunities that he will discuss with you.

While our combined support over the next five years will assure a jump-start toward the excellence in fisheries education and research that this state needs and deserves, our mutual objective must be to ensure sustainability. To this end, the FY07 budget that we will propose to the governor and the legislature includes not just the funds needed to keep the doors open and finish vital programs we have started, but $4M as the start of a planned increase in investment in research and development to support state needs. I urge you to join with me in convincing the governor and legislature to fully support our budget request. If we are successful, then I assure you that the total $1M/year match from UA will go into SFOS base and will remain there as a proud and enduring legacy of your generosity.

Sincerely,

Mark R. Hamilton
President