

Project Title: Increasing experiential learning opportunities for undergraduate students in Fisheries at the University of Alaska Fairbanks

January 2010 Report to the PCCRC

P.I. (and report author): Amanda Rosenberger, University of Alaska Fairbanks (UAF) School of Fisheries and Ocean Sciences (SFOS), Fisheries Division

Task Order number:

Abstract

The goal of the project is to enhance and expand the experiential learning program in the Fisheries Division of the University of Alaska Fairbanks (UAF) School of Fisheries and Ocean Sciences (SFOS). Within Alaska's unique environment, this program is giving undergraduate students opportunities to participate in fisheries and marine biology research and management in occupational and research settings, expanding student's professional development through mentorship, encouraging pursuit of graduate studies, and better preparing them for their future careers in fisheries. Our accomplishments include: **(1)** Twenty-two students participated in the Experiential Learning Program this summer, 15 of which were formally employed in the fisheries field in 2009; **(2)** three students were employed in fisheries laboratories in the Spring of '08; internship opportunities were no longer available to students in '09; however, residual funding can be used to again offer this employment if we are granted a continuance; **(3)** In spring of '09, a symposium took place that highlighted the Experiential Learning Program in fisheries in addition to the fisheries employment experiences of three UAF undergraduate students; two of these presenters travelled with the P.I. to the American Fisheries Society Annual meeting in Nashville; another experiential learning symposium is planned for this spring (10); **(4)** the NSF-sponsored Nunivak Island Science Camp took place the summer of '09 and was a tremendous success and a great experience for the seven Bethel students enrolled.

Introduction and Background

Practical research and field experiences in academic or professional settings in their chosen field offer students inspiration, lasting lessons, and a foundation for future graduate research. Further, students benefit greatly from the attention, example, and lessons that mentorship from a professional can provide. The funding provided by the PCCRC greatly enhanced the Experiential Learning program in the Fisheries Division, University of Alaska Fairbanks (UAF), which involves students from pre-college to upper-classman undergraduates in hands-on learning, providing continuing mentorship and guidance that can lead to a successful professional career in the fisheries industry, government agencies, non-governmental organizations, or academia. In addition, funding from PCCRC encouraged interaction between faculty within UAF School of Fisheries and Ocean Sciences (SFOS), including graduate faculty otherwise uninvolved in undergraduate education, expanding opportunities for both research programs within SFOS and student interaction with marine sciences faculty.

A critical commitment of the UAF SFOS is the training of future professionals in the field of fisheries. Public agencies and marine industries throughout Alaska and beyond state borders need knowledgeable and experienced scientists, technicians, economists, social scientists, and managers

focused on the larger field of fisheries. Consequently, UAF SFOS recently began a major initiative to expand and enhance their undergraduate program in fisheries in an effort to elevate the program to one of national prominence (<http://www.sfos.uaf.edu/fisheries/>). In January of 2007, the Rasmuson Foundation provided a \$ 5.0 million grant matched by UAF to support this new direction for undergraduate students in fisheries in Alaska. Although these are significant contributions, much of the funding is dedicated towards hiring new faculty and improving infrastructure, and we cannot rely solely on these funds to support all of our initiatives, including the Experiential Learning Program. Funding from the PCCRC supplemented and enriched the Experiential Learning Program in Fisheries at UAF SFOS towards achieving our goal of providing life-changing experiences for our students that will foster an appetite for life-long learning. Hands-on learning deepens the educational experience for fisheries students and accelerates student development into young professionals. In addition, experience with the fisheries-in-practice, such as field work, fisheries management, fisheries research, and seafood marketing, is often what is most exciting and engaging for young students. The opportunities that Alaska affords to burgeoning fisheries scientists are unrivaled elsewhere, and these kinds of experiences will draw students from within and outside Alaska to pursue undergraduate study in fisheries in Alaska.

PROGRESS ON OBJECTIVES

In our project, we sought funds to supplement five aspects of experiential learning in the fisheries program at UAF. Our objectives were to: 1) develop an internship program that will give students learning opportunities in the workplace and field as a crucial and required component of their undergraduate education; 2) organize a student symposium highlighting undergraduate occupational experiences and sponsor participating students' travel to professional meetings to present research accomplishments; 3) provide support for students to work with SFOS faculty conducting marine and freshwater research; and 4) create a college-level curriculum for high school students from the Yukon-Kuskokwim-Delta as part of an NSF-funded science camp on Nunivak Island in the eastern Bering Sea. In the following report, I summarize our accomplishments for each of these objectives.

Accomplishments for Objective 1: Develop an internship program that will give students learning opportunities in the workplace and field as a crucial component of their undergraduate education.

Experiential learning is a critical component of the revised Bachelor's of Science (B.S.) curriculum and new Bachelor's of Art (B.A.) curriculum at SFOS. Largely due to the efforts of Trent Sutton, students can choose from two fisheries curriculums, including a re-crafted B.S. and new B.A. The structure and guidelines for the three experiential learning classes in these curricula (FISH 290 Fisheries Internship; FISH 490 Experiential Learning – Fisheries Internship; FISH 499 Senior Thesis) have been developed and syllabi finalized. Summer salary support for the Experiential Learning Coordinator from PCCRC has allowed all three of these courses to be available year-round through 2009. The experiential learning coordinator matched fifteen UAF students with fisheries positions during the summer and Fall of 2009 (Table 1). Students occupied primarily technician positions with a variety of employers, including UAF laboratories, Alaska Department of Fish and Game; Montana Fish, Wildlife, and Parks; Bristol Bay Science and Research Institute, and the LGL Alaska Research Association (Table 1). Four independent studies were completed with those internships under the tutelage of Amanda Rosenberger (Principle Investigator and Experiential Learning Coordinator).