

Kodiak Seafood and Marine Science Center

University of Alaska Fairbanks

College of Fisheries and Ocean Sciences

Annual Report
FY2018 (July 1, 2017–June 30, 2018)



Prepared by Quentin Fong (Coordinator, Kodiak Seafood and Marine Science Center) and the faculty and staff based at the Kodiak Seafood and Marine Science Center, University of Alaska Fairbanks

December 2018

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Annual Activities Report

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Executive Summary

Introduction

The Kodiak Seafood and Marine Science Center (KSMSC) is a unique facility including classrooms, laboratories, a test kitchen and a pilot seafood processing plant that enables the University of Alaska Fairbanks (UAF) to provide a statewide program of research, technical assistance, workforce training and education. KSMSC is Alaska's only workforce development and applied research center focused on the seafood processing/fishing industry, as designated by the Alaska State Legislature in 1983. KSMSC also serves the Kodiak Island communities as a regional marine research and education center.

UAF personnel working at KSMSC currently consist of four faculty members (three Alaska Sea Grant Marine Advisory and one Fisheries) and four staff members all within the UAF College of Fisheries and Ocean Sciences (CFOS). In addition, the UAF Cooperative Extension Service's 4-H coordinator works at KSMSC. Graduate students and visiting UA faculty use the Center and a number of community groups make use of the space for meetings during the year.

Kodiak is the fourth largest seafood port in the nation and has a large resident seafood processing and fishing workforce, with plants operating 11 months a year. Statewide, the waters off Alaska produce over 60% of the nation's seafood valued at \$5.4B in direct output and the seafood industry is the state's largest private employer with over 50,000 jobs. Kodiak Island also has a number of smaller outlying villages that have a strong subsistence economies based on marine resources, whose residents also use the services at KSMSC.

The Kodiak Seafood and Marine Science Center is a hub of applied research, training and technical assistance for a statewide seafood industry audience. It supports food safety in Alaska and is recognized as a food process authority by the Alaska Department of Environmental Conservation.

The Alaska Research Consortium (ARC), a community and industry 501(c)(3) non-profit, formed in 2016 with the goal of supporting KSMSC's mission as defined in Alaska statute, worked closely with the University of Alaska Fairbanks in FY18. At the end of FY18, UAF committed to continued operation of KSMSC with ARC committing to providing ongoing support and input into the future programming at the Center.

KSMSC's Activities in FY2018

FY2018 was a busy and active year for the Kodiak Seafood and Marine Science Center. KSMSC hosted a meeting, training, class or event almost daily during the year with over 700 people using the building (including the classrooms, pilot processing plant and labs) for classes, meetings, training, seminars or events during the year.

One hundred and fifty four (154) participants received workforce and business/marketing development training in 9 seafood processing/fishing industry classes offered by Alaska Sea Grant at KSMSC and in two additional coastal communities and via online. Training classes generated over \$60,000 in fees in FY2018.

Four UAF undergraduate/graduate fisheries classes were taught or hosted at KSMSC this year, serving 8 graduate and undergraduate students. One class was taught by KSMSC-based faculty teaching to students across the state and four classes were taken by Kodiak-based students via videoconference in the building.

Ten research projects were conducted by all faculty members in the areas of seafood science, product development, fisheries, climate change, harmful algal blooms and safe subsistence harvest of shellfish. One peer-reviewed publication, and four scientific/industry reports were produced by the Marine Advisory and Fisheries faculty based at KSMSC.

Technical assistance and information was provided on an ongoing basis throughout the year by all faculty members, who engaged with over 80 different seafood businesses and individual food producers as well as with state and federal agencies, tribal representatives and nonprofit groups. Numerous outreach and marine education projects took place in the building, ranging from ComFish Alaska forums, paralytic shellfish poisoning PSP community sampling and testing studies, and K-12 marine education events. Marine Advisory faculty at KSMSC engaged with over 300 local youth during the year in marine science classes, labs and field trips.

External funding for faculty in FY2018 based at KSMSC came from nine funders. Funders included Alaska Sea Grant, NOAA, Pollock Conservation Cooperative Research Center (PCCRC), UA Technical Vocational Education Program (TVEP), North Pacific Research Board, Alaska Seafood Marketing Institute, Alaska Native Tribal Health Consortium, National Science Foundation and the Southwest Alaska Municipal Conference (SWAMC). NOAA's support for cod research at KSMSC has been significant this fiscal year.



Kodiak Seafood and Marine Science Center

University of Alaska Fairbanks

FY18 Annual Report

Background

The University of Alaska Fairbanks Kodiak Seafood and Marine Science Center (KSMSC) is a 20,000 square foot, seafood processing and marine research and training/education facility serving a statewide role of research, technical assistance, education and workforce development training. KSMSC also serves the Kodiak Island communities as a regional marine research and education center.

The Kodiak Seafood and Marine Science Center's (formerly FITC) purpose is directed in AS.52.020. "The center shall create employment opportunities in the state's fishing industry and other benefits to the state by:

- (1) providing training opportunities to citizens of the state on the most efficient and appropriate technologies for the harvesting, processing, and conservation of the fishery resources of the state;
- (2) providing information and technical assistance on the adaptation of existing and new technologies to the users of the fishery resources of the state;
- (3) providing research and development activities to adapt existing technologies to enhance the economic viability of the industry;
- (4) providing research and development activities to create new technologies that will enhance the effectiveness of the industry, and provide economic benefits to state citizens; and
- (5) encouraging joint projects between industry and government in order to use industrial experience and government programs to enhance the productivity of the industry."

KSMSC is an important asset in the implementation of the Alaska Maritime Workforce Development Plan, endorsed by the Alaska State Legislature, the UA Board of Regents, the Alaska Department of Labor and Workforce Development, the Alaska Workforce Investment Board and the industry group Maritime Works.

The Alaska Research Consortium (ARC), a community and industry 501(c)(3) non-profit, formed in 2016 with the goal of supporting KSMSC's mission as defined in Alaska statute, worked closely with the University of Alaska Fairbanks in FY18.

Teaching and Training, FY18

Seafood Processing and Fisheries Workforce Development Training Classes

154 people were trained in 9 seafood processing/fishing industry workforce development trainings offered by Alaska Sea Grant Marine Advisory faculty at KSMSC and in two additional coastal

communities, generating over \$60,000 in program income from training fees. Classes are offered as non-credit intensives, meeting the training needs of a year-round industry. Descriptions of each class can be found on the Alaska Sea Grant website <https://seagrant.uaf.edu/map/workshops/seafood-processing/index.php>



September

- **HACCP (Hazard Analysis Critical Control Point)**, 2 day, 16 hour class. Certified by the Association of Food and Drug Officials (AFDO). 15 participants, Sannito, course fee \$200.
- **Commercial Fishing Drill Conductor**, Coast Guard required training for commercial fishermen, 2 days, 16 hours. 13 participants, Matweyou.

October

- **Smoked Seafood School**, smoking seafood practices, safety, operational issues for commercial producers. 3 days, 24 hour class, 15 participants, Sannito, course fee \$270.
- **Introduction to Seafood Direct Marketing**, online, statewide 15-hour class for those interested in marketing their own seafood. 20 participants, Fong, course fee \$125.

November

- **Alaska Seafood Processing Leadership Institute**, 80 hour training, followed by trip to International Seafood Expo in Boston. Designed for mid-level seafood processing managers nominated by company. 22 participants from Silver Bay, Icicle, Peter Pan, Alaska Pacific Seafoods, Trident, Kwik'pak Fisheries, Leader Creek Fisheries. Fong and Sannito, course fee \$2,200 per person.

December

- **Commercial Fishing Drill Conductor**, Coast Guard required training for commercial fishermen, 2 days, 16 hours. 9 participants, Matweyou.

April

- **HACCP**, Anchorage and Juneau, 27 participants, Sannito, course fee \$200.

May

- **Sanitation Controls for Seafood Processors**, 4 participants, 3 days (24 hours), Sannito and Himelboom, course fee \$80.
- **Commercial Fishing Drill Instructor**, 2 classes, 2 days each, 30 participants, Matweyou.

UAF Fisheries Undergraduate and Graduate Credit Classes

One class was taught by KSMSC-based UAF faculty members to students across the state. FISH 261, Introduction to Fish Utilization was not offered in FY18 due to faculty retirement. FISH 261 is a requirement for the College of Fisheries and Ocean Sciences undergraduate Fisheries program. It will be offered by KSMSC based faculty in FY19.

- Fish 340, **Seafood Business**, 3 credits, fall, 4 students, Fong

KSMSC Summer Internship Program

Two summer interns were hosted by faculty at the Kodiak Seafood and Marine Science Center during this reporting period, an ASMI graduate level intern and a Sun'aq Tribe of Kodiak young professional intern.

Marine Advisory agent Julie Matweyou works collaboratively with local organizations including the Sun'aq Tribe of Kodiak and the The Latin American Women's Association (ALMA) to host summer interns as suitable candidates and funding arise. These collaborations have been extremely successful and continue annually. For the FY18 reporting period, natural resource intern Mandi Cox assisted Matweyou with development of PSP activities. The ALMA youth summer internship in 2017 and 2018 occurred outside of this reporting period.

One graduate student interned this summer in partnership with the Alaska Seafood Marketing Institute (ASMI). ASMI's Michael Kohan supervised the intern from her office in Juneau, while Kodiak-based Alaska Sea Grant Marine Advisory faculty were on the ground overseers, providing input, equipment and logistics.

Katherine Rubio, a PhD student from Louisiana State University evaluated the antibacterial effect of chitosan as an edible film on cooked Dungeness crab products. Chitosan, a long-chain sugar or polysaccharide extracted from shrimp shells and crab shell waste, is used as a natural antifungal seed coating in agriculture. Chitosan can also improve the storability of perishable foods and can potentially prevent illness from spoiled foods. Currently, the Alaska seafood industry uses a salt water brine and water glaze to protect crab meat.



Applied Research and Technical Assistance to industry

In FY2018, 10 research and technical projects were conducted out of KSMSC, funded by the Alaska Seafood Marketing Institute, National Science Foundation, NOAA Fisheries, North Pacific Research Board, Pollock Conservation Collaborative Research Center, and Alaska Native Tribal Health Consortium. Five publications or reports were produced by UAF KSMSC-based faculty.

Highlights:

Pacific Cod Research

With the quota cut 80% for 2018, the status of Pacific cod is probably the biggest fishery issue facing Kodiak right now. It appears that stock biomass has collapsed because recruitment (production of young fish to enter the population) has been very low during the recent string of incredibly warm years in the Gulf of Alaska. The exact links between temperature and poor recruitment are not understood, but the leading hypothesis is that warmer temperatures increase the metabolic rates of young cod, and food supplies were inadequate for meeting the resulting increase in energetic needs. There's one sticking point about this hypothesis - there are basically no data available to test it. Studies of fish ecology and population dynamics in Alaska are overwhelmingly conducted in the summer. In particular, almost nothing is known about wintertime ecology of juvenile Pacific cod. UAF faculty member based at KSMSC, Mike Litzow, along with new hire Alisa Abookire, are beginning a pilot study of juvenile Pacific cod winter ecology this month. Mike and Alisa will be collaborating with a group from the Hatfield Marine Science Center in Newport, OR, who have been studying juvenile cod over the last 12 years in Kodiak. The new research will expand sampling into the winter to collect basic information about habitat use, diet, and energetics. This pilot study is part of a broader initiative that is seeking funding to continue sampling in future winters, and to conduct summertime sampling of juvenile cod across the western Gulf, both to increase our understanding of the way that climate change is affecting the fishery, and to give managers an early indication of the likely strength of recruitment in future years.



PSP studies in the Kodiak region

Julie Matweyou continued work on the North Pacific Research Board study funded in 2016. This study focuses on the development a new field PSP test kit and addresses shellfish harvest and consumption practices in Western Alaska. Project partners include Sun'aq Tribe, Alutiiq Tribe of Old Harbor, City of Ouzinkie locally; Bruce Wright with the Aleutian Pribilof Island Association with the communities of King Cove and Sand Point; and national experts from the NOAA Beaufort NC lab. The Beaufort lab analyzes all Kodiak samples using high performance liquid chromatography (HPLC) test which provides data on the various congener that comprise saxitoxin. This detailed information is informing our seasonal toxicity patterns and the development of the field test kit. One component of the study addresses local clam cleaning methods. Butter clam tissues are being segregated and tested to determine



patterns of toxicity and to inform better processing and cleaning methods to reduce the risk of PSP with personal shellfish harvest. Preliminary analysis by the team demonstrates toxin storage and seasonal distribution of toxins within tissues.

Waste Reduction, Profit Improvement in Surimi Processing. KSMSC faculty and staff provided operational and logistics support to Dr. Tyre Lanier, North Carolina State University to unveil and demonstrate new technology that will allow Alaska to extract more profit from the surimi-making process while keeping the seafloor cleaner outside manufacturing plants. The patented technology involves shifting the pH of the water left over after making surimi, allowing proteins and fine meat particles to be captured and remanufactured into more surimi seafood products.



Alaska Sea Grant continues to be part of the Manufacturing Extension Partnership.

The Alaska Sea Grant Marine Advisory Program continues to be a collaborator in the Hollings Manufacturing Extension Partnership (MEP) 5-year federal grant awarded to the Southwest Alaska Municipal Conference (SWAMC). The MEP in each state provides manufacturing companies with services and resources to enhance growth, improve productivity, reduce costs, and expand capacity. Seafood harvesting and processing are the focus of the Alaska MEP, and Marine Advisory faculty based at KSMSC are providing seafood processing training and technical assistance. Other partners include Southeast Conference and the Anchorage Economic Development Corporation. The PIs are Fong and Sannito.

Research at KSMSC FY2018

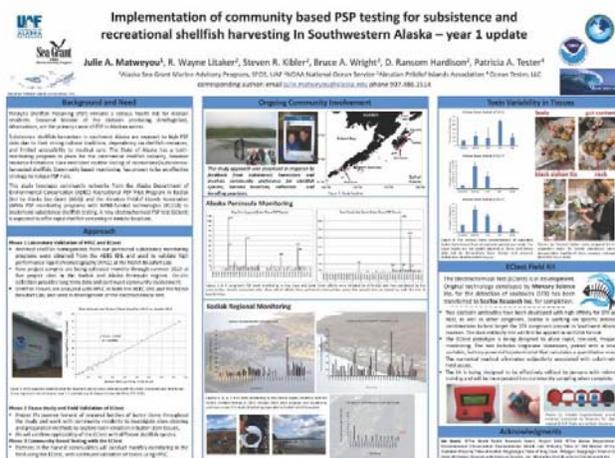
- **Measuring the strength of ocean-atmosphere coupling to predict climate forcing of northeast Pacific ecosystems**, Litzow (co-PI with seven others), NOAA Fisheries and the Environment program, 2018-2020.
- **Development of Value-added Market Opportunities for Pollock Co-products**, Fong, Pollock Conservation Cooperative Research Center (co-PI with C. Dewitt, M. Kohan), 2017 to 2020
- **Understanding post-settlement survival in juvenile Pacific cod**, Litzow, NOAA Cooperative Research Program (Co-PI with B. Laurel, A. Abookire), 2018-2019
- **Is nearshore habitat essential to overwintering young of the year Pacific cod?** Litzow (co-PI with five others), NOAA Essential Fish Habitat program, 2018-2019.
- **Developing Alternative Product Forms for Pollock Roe**, Fong, Pollock Conservation Cooperative Research Center (co-PI with C. Sannito, B. Smith), 2016 to 2019.
- **Utilization of nano-scale fish bone for gel enhancement of Alaska pollock surimi and as CalPro injection marinade made from surimi fish protein for improved nutritional and**

eating quality of Alaska pollock fillets, Fong, Pollock Conservation Cooperative Research Center (co-PI with J. Park), 2016 to 2018.

- **Non-analog ecosystem states in the Gulf of Alaska**, Litzow, NSF Biological Oceanography (Co-PI with L. Ciannelli and R. Rykaczewski), 2016-2018.
- **Juvenile cod research in Kodiak**. Litzow, UA Foundation / Ocean Phoenix Research Fund, 2017-2018
- **Implementation of Community Based PSP Testing for Subsistence and Recreational Shellfish Harvesting in Southwestern Alaska**, Matweyou, co-PI, NPRB, ongoing
- **Safe Subsistence Shellfish Harvest in the Face of Climate Change**, Matweyou, ANTHC, ongoing.

Publications and Reports

- Anvari, M., B. Smith, C. Sannito & Q.S.W. Fong. 2018. Characterization of rheological and physicochemical properties of Alaska walleye pollock (*Gadus chalcogrammus*) roe. Journal of Food Science and Technology. 55(9): 3616-3624
- Fong, Q.S.W. and J. Park. 2018. Utilization of nano-scale fish bone for gel enhancement of Alaska pollock surimi and as Calpro injection marinade made from surimi fish protein for improved nutritional and eating quality of Alaska pollock fillet. Project progress report submitted to PCCRC. Project progress report submitted to PCCRC
- Fong, Q.S.W., C. Dewitt, and M. Kohan. 2018. Development of value-added market opportunities for pollock co-products. Project progress report submitted to PCCRC. Project progress report submitted to PCCRC
- Litaker, W., J. Matweyou, P. Tester, and S. Kibler. 2017. Implementation of community based PSP testing for subsistence and recreational shellfish harvesting in southwestern Alaska. NPRB 1616 Semi-Annual Progress Report, July.



- pH testing of pickled crab products
- Water activity measurement of food products
- Recommendation on repair solutions for smoke house

Kodiak regional partners of the NPRB funded study to develop a field test for paralytic shellfish poisoning (PSP) include the Sun’aq Tribe of Kodiak, the City of Ouzinkie and the Alutiiq Tribe of Old Harbor.

Technical assistance was provided in areas listed below:

- Assist in developing crab cooking protocols
- Disseminate information on seafood label printers and stock
- Transfer research findings of fish skin extrusion project

- Run temperature trials of crab cookers
- Dried seaweed product development assistance
- Disseminate freezing, water usage and packaging options for octopus processing
- Seal oil HACCP plan
- Pickled product regulations and processing
- Transfer information on mobile seafood pin bone machines
- Information on registering with FDA
- Chaga pulverization and extraction ideas
- Wastewater collection procedures
- Heat distribution studies for cookers
- Assist in recall plan development
- Sensory analysis of frozen products
- Dried food commercialization product regulatory requirements
- Reviewed smoked salmon production data
- Refine HACCP and SSOP plans
- Transfer information on oxidation of salmon fillets
- Develop safe process for ale production
- Enzyme digestion of roe sacs information
- Mushy King salmon roe issues
- Provide process authority letters
- Equipment selection for new processing enterprise
- Transfer information on structural insulation panels
- Cold pressed juice and flash pasteurizer units information
- Smoked salmon retort jars
- Proper thawing procedures for salmon reprocessing
- Assist with five log reduction process
- Business plan development
- Marketing opportunities

Sample of companies and groups seeking assistance from KSMSC included:

- Blue Evolution
- Kodiak Island Smoke House
- Norton Sound Seafoods
- Icicle Seafoods
- Alaska Pacific Seafoods,
- Alaska Seafood Company,
- Alaska Coastal Seaweed
- American Seafoods
- Cooperative Extension Service
- Jipping Ginger Beer
- Soul Mate Salmon
- Alaska Berry Company
- Pickled Willies
- Adventure Appetites
- Wooden Spoons Alaska
- Barnacle Seafoods
- Homer Brewing Company
- F/V Mar Pacifico
- Heather's Choice
- Oregon Seafoods

Public Service and Marine Education



Bringing Field Research to Classroom

Julie Matweyou and Cindy Trussell (associate professor of natural sciences at Kodiak Community College) co-instructed the Abraxis Saxitoxin ELISA lab at the Kodiak College. This has been a 7-year partnership to involve Kodiak undergraduate students in real time research and monitoring of PSP toxins using the commercially available 96 well assay. This is an advanced, multi day lab with students involved in the collection, preparation, toxin extraction and toxin testing of locally harvested shellfish.

Marine Science Education in Rural Village Classrooms

Matweyou expanded her research trip to Old Harbor to include educational activities with Old Harbor youth. She led a clam dissection during the Alutiiq Tribe of Old Harbor Earth Day after-school lesson and visited the Grade K-2 classroom for a comparative anatomy lesson. The kids had just completed human anatomy and were quite interested in learning about clam parts. Matweyou also joined the class for community cleanup and the Tribal barbecue.

Comfish Alaska

KSMSC and Alaska Sea Grant continue to support ComFish, Alaska's annual industry trade show held in March 2018. Aside from serving on the planning committee, Julie **Matweyou**, who serves on the planning committee, organized and co-led a shark dissection presentation and led the popular Fishermen's Showcase competition. Mike Litzow also presented a talk titled "Alaska Fisheries in the Global Warming Present."



Boards and Councils served by faculty at KSMSC

- ADEC Alaska Food Safety Advisory Committee
- ASMI Seafood Technical Committee
- Latina Association of Women Board
- Kodiak Comprehensive Economic Development Committee
- Kodiak College Vessel Repair & Maintenance Local Advisory Committee
- Kodiak Workforce Regional Advisory Council
- OceansAlaska Board of Directors
- Western Regional Aquaculture Consortium Extension Technical Committee

Press Coverage

KMXT, Local Public Radio Coverage:

- <http://kmxt.org/2017/08/uaf-intern-looks-nucleotides-health-supplement/>
- <http://kmxt.org/2017/09/family-returns-kodiak-10-years-sailing-around-world/>
- <http://kmxt.org/2017/10/people-across-country-travel-kodiak-learn-smoke-fish/>
- <http://kmxt.org/2017/11/talk-rock-alaska-young-fishermens-summit/>
- <http://kmxt.org/2018/02/fishermen-aspire-enter-world-seafood-processing/>
- <http://kmxt.org/2018/02/new-study-looks-pacific-cod-stocks-crashing-gulf-alaska/>
- <http://kmxt.org/2018/03/comfish-forum-climate-change-fisheries/>
- <http://kmxt.org/2018/04/talk-rock-fish-climate-change/>

- <http://kmxt.org/2018/04/alaska-fisheries-report-april-12-2018/>
- <http://kmxt.org/2018/05/local-researchers-try-understand-pacific-cod-stocks-crashing-gulf/>
- <http://kmxt.org/2018/07/graduate-student-experiments-extending-shelf-life-safety-cooked-crab/>
- <http://kmxt.org/2018/07/uaf-invests-seaweed-industry-kodiak-facility/>

Kodiak Daily Mirror, Local Newspaper Coverage:

- http://www.kodiakdailymirror.com/news/article_52627e86-cb41-11e7-ae01-bf7bff392c37.html Next Generation of Seafood Managers meet in Kodiak
- http://www.kodiakdailymirror.com/news/article_d485c0b2-0abc-11e7-8429-eb0b47c4e9c8.html Facing cuts, Marine Science Center tries to stay afloat
- http://www.kodiakdailymirror.com/news/article_e65eeaf6-dafb-11e7-bd1d-2f5b25130971.html Group Tries to Save Marine Science Center
- http://www.kodiakdailymirror.com/news/kodiak_news/article_a110834e-8a5d-11e8-a4b1-b3b8e50edd1f.html Kodiak’s Seafood & Marine Science Center nets support
- http://www.kodiakdailymirror.com/news/article_e5ee1bf0-1084-11e8-badf-efc2bb8bb117.html Studies begin on the decline of cod
- http://www.kodiakdailymirror.com/news/article_357fd32c-33ba-11e8-b13f-77b38c0d8fa8.html Golden age of salmon, Historical temperature shifts in the Gulf of Alaska coincide with changes in fisheries

KSMSC Operations

Budget

In FY18, faculty and staff salaries and program expenses at the Center were covered by University of Alaska Fairbanks funds, charges to nine grants, and program income. The University of Alaska Fairbanks covered operations and maintenance of the Kodiak Seafood and Marine Science Center.

Kodiak Seafood and Marine Science Center Budget, FY2018, \$1,153,015



- UAF funds: \$928,316
 - staff salaries: \$176,035
 - operations: \$184,011
 - maintenance: \$127,243
 - faculty salaries/benefits: \$441,027
- Faculty salaries charge to grants: \$192,465
- Staff salary charge to grants: \$15,515
- Intern salaries charge to grant: \$16,719
- Grants charged: \$224,699
 - Alaska Sea Grant Omnibus
 - Southwest Alaska Municipal Conference
 - Alaska Seafood Marketing Institute
 - TVEP, Seafood Processing Training Program
 - Pollock Conservation Cooperative Research Center (PCCRC)
 - National Science Foundation
 - Cooperative Institute for Alaska Research, University of Alaska Fairbanks
 - Ocean Phoenix Fund
- Program income: \$60,900
- KSMSC rental revenue: \$18,063

Administration

- S. Bradley Moran, Dean, College of Fisheries and Ocean Sciences
- Quentin Fong, Marine Advisory professor, seafood marketing, is KSMSC onsite coordinator.

UAF CFOS Faculty Based at KSMSC

- Quentin Fong, seafood marketing specialist, Professor, Marine Advisory Program, KSMSC coordinator
- Julie Matweyou, Marine Advisory Program agent, Assistant Professor
- Chris Sannito, seafood processing specialist, Research Assistant Professor, Marine Advisory Program
- Mike Litzow, Research Assistant Professor, Fisheries

Staff

- Astrid Rose, Marine Advisory Program Program Assistant
- Laurinda (“Kay”) Bodi, KSMSC Facilities Manager
- Kate Schaberg, 4-H coordinator, Cooperative Extension Service
- Danielle Ringer, Research Professional

Interns

- Katherine Rubio, PhD student from Louisiana State University evaluated the antibacterial effect of chitosan as an edible film on cooked Dungeness crab products.

Alaska Research Consortium

The Alaska Research Consortium (ARC), a community and industry 501(c)(3) non-profit, formed in 2016 with the goal of supporting KSMSC’s mission as defined in Alaska statute, worked closely

with the University of Alaska Fairbanks in FY18. During FY18, ARC and UAF investigated various operations and management scenarios for KSMSC. At the end of FY18, UAF committed to continued operation of KSMSC with ARC committing to providing ongoing support and input into the future programming at the Center. Currently, ARC is focused on workforce development for the seafood industry and support of KSMSC. ARC Board President is Jay Stinson. Board members include Pat Jacobsen, Alan Austerman, Paul Lumsden, Matt Moir, Duncan Fields, Jeff Stephan, Tom Lance and Michael Kohan.