

To: ASMI Board of Directors

Date: October 24, 2025

From: John Burrows, Technical Program Director

RE: FY26 Technical Program Budget

The following is a summary of the FY26 Seafood Technical Program budget activities for each program budget line.

Key Budget Changes FY22-26

- **A SK grant of \$298,450 was awarded to ASMI Technical in FY22** by the National Oceanic and Atmospheric Association (NOAA) Saltonstall-Kennedy (SK) Grant Program for developing a database housing nutrient/contaminant data specific to Alaska seafood species. **This effort has been used to generate several regulatory comments, collateral pieces, articles are currently in draft for submission to peer-review. Nutrition data has been accepted to USDA Foundation Foods and is pending release.**
- For FY23, an additional 30k was allocated to the program, representing ~8% increase. 22k of this allocation went to the operational budget, representing roughly a 10% increase.
- The FY24 program budget was unchanged, while the personal services line was increased, necessitating a drop in operational budget of roughly 20%. However, this increase was not implemented until late in the FY, and not to the extent approved.
- For FY25, the budget decreased \$30,000, to \$390,000 and dropping the operational budget from \$208,000 to \$197,000, a 5% reduction in operational funds.
- ASMI Technical was awarded a new NOAA SK Grant in the amount of \$500k for the evaluation of new value-added products to increase utilization and value of Alaska's seafood resource. Though awarded, NOAA's internal processes were delayed, meaning we are still awaiting a final approval and funding. We re-submitted the budget for the project in late October 2024 on NOAA's request to allow a January 1, 2025 start date. **As of October 2025, this project is still pending NOAA's release of funds.**
- **For FY26, an additional 10k was included in the ASMI Technical Budget, bringing the total amount to \$400k USD, while absorbing personal services increase of \$24,000, representing a roughly 5% decrease in operational budget.**

Comparison of Fiscal Year Technical Program Budgets

Program	FY22 Budget	FY23 Budget	FY24 Budget**	FY25 Budget	FY26 Budget
Program Operations					
Personal Services	\$145,000	\$153,000	\$197,000**	\$193,000	\$217,000
Travel	\$20,000	\$20,000	\$15,000	\$20,000	\$15,600
Total	\$165,000	\$173,000	\$212,000**	\$213,000	232,600
Trade Education					
Industry Training/Resource Development	\$35,000	\$40,000	\$30,000	\$30,000	\$15,000
Total	\$35,000	\$40,000	\$30,000	\$30,000	\$15,000
Support Materials					
Content Development	\$40,000	\$42,000	\$40,000	\$30,000	\$20,000
Outreach and Education	\$40,000	\$42,000	\$40,000	\$30,000	\$20,000
Total	\$80,000	\$ 84,000	\$80,000	\$60,000	\$40,000
Applied Investigations*					
Research and Development	\$110,000*	\$123,000*	\$98,000*	\$87,000*	\$112,400*
Total	\$110,000*	\$123,000*	\$98,000*	\$87,000*	\$112,400*
TOTALS	\$390,000*	\$420,000*	\$420,000*	\$390,000*	\$400,000*

**Applied Investigations and Overall Budget do not include SK Grant funding.*

***Personal Services amount in FY24 was approved by ASMI Board and Committee, but this increase was not implemented fully and was only implemented at the end of the fiscal year, leaving greater funding and flexibility elsewhere in the budget.*

Technical Program Key Activities

Please see the FY24 Fall Seafood Technical Program report for further information on the activities listed below.

Program Operations

\$232,600, ~58% of overall budget

Personal services and travel.

Increase of funds: \$213,000 ->\$232,600

Applied Investigations

\$112,400, ~28% of overall budget

SK Supporting funds, UCONN breast cancer survivor microbiome study, OSU chef frozen sensory study, OSU wastewater protein study, matching funds for grant applications, OSU frozen seafood acceptability study, McKinley research contracts, support for product acquisition and shipment for various industry studies, canned salmon study, University of Washington carbon footprint study, publishing fees to prevent paywalls, study 1-pagers.

Increase of funds: \$87,000+ SK Grant -> 112,400 + SK Grant

Trade Education

\$15,000, ~4% of overall budget

Seafood technical workshops/trainings with Kodiak Seafood Marine Science Center/Sea Grant, trade presentations, event and educational conference sponsorships (Pacific Fisheries Technologists Conference, OSU Surimi School, NFI Salmon School, etc.) collaborative projects, resource development with research affiliates, academic program development and regulatory efforts, trade specific materials, memberships of SeaShare and Alaska Research Consortium Boards.

Decrease of Funds: \$30,000 -> \$15,000

Support Materials

\$40,000, ~10% of overall budget

Content development and design, contracts with artists, printing fees for all technical material, and website maintenance/development

- Quality, nutrition, and consumer-aimed technical videos
- ASMI publications/species fact sheets
- Website – nutrition, quality, handling, safety, utilization
- Sea Grant/ASMI/ADFG technical fact sheets
- New campaign/SMT based on SK data
- Quality control information for industry and harvesters
- Messaging for technical topics

Decrease of funds: \$60,000 -> \$40,000

Alaska Seafood Marketing Institute

Date: October 24, 2025

To: ASMI Board of Directors

From: John Burrows, ASMI Seafood Technical Program Director

Program Update: Activities from 11/2024

Program Objectives

- Support efforts that ensure safe, quality Alaska seafood products reach the consumer.
- Position program as the lead technical and scientific information source for seafood quality, safety, nutrition and health benefits, and sustainability.
- Encourage projects that incorporate innovative approaches to developing seafood products from Alaska.
- Provide outreach to educate and inform the market, trade, and consumers on the technical aspects of Alaska seafood.
- Promote the developing seafood technical field and promote studies with Alaska seafood.

Background

The goal for the program is to connect with the industry and provide resources to industry, trade and consumers in multiple technical categories including: seafood safety, seafood quality, nutrition, utilization, traceability, sustainability, and promoting innovative opportunities for Alaska seafood. An important component of the technical program is to provide support for the marketing programs on technical matters and to aid in developing technical materials for all of the programs.

Seafood Technical Program Overview



Applied Investigations

Research opportunities related to the quality and value of Alaska seafood

- seafood safety, nutrition, and quality
- quality processing, utilization



Supplied Materials

Outreach and educational material related to Alaska seafood

- develop content, materials and provide guidance for technical topics to industry, trade, and consumers
- develop materials for industry on quality and processing techniques



Trade Education

Outreach and educational opportunities in seafood technical issues for the industry

- support educational opportunities to promote the seafood technical field

Projects

Projects of interest for the technical program were determined by direction from the seafood technical committee and other ASMI committee requests.

Applied Investigations

- **National Oceanic and Atmospheric Association (NOAA) Saltonstall-Kennedy (SK) Grant- Increasing Market Access and Consumer Confidence with Trusted Nutrient and Contaminant Data and Outreach for Alaska Seafood**

- The technical program's application for a NOAA SK Grant to collaborate with the Alaska Department of Environmental Conservation (ADEC) in developing a database housing nutrient/contaminant data specific to Alaska seafood species was successful. This multi-year project was awarded \$298,450.00 for the project, which began in September in 2021. We are working to develop a comprehensive, current, and defensible nutrient and contaminant dataset for Alaska seafood and disseminate the results through an extensive outreach strategy. The project is being evaluated by a representative technical advisory committee guiding the project and will employ consumer-marketing surveys in various markets for Alaska seafood. S-K Grant Program objectives will be fulfilled by increasing consumer and trade confidence in Alaska seafood resulting in increased market demand. Completion of this project will improve global public relations, satisfy trade requests for information, and encourage collaboration between the state of Alaska and federal agencies to share data on Alaska seafood safety and nutrition information. Additionally, the project will generate marketing and outreach opportunities that can position the Alaska seafood industry to better compete in global markets and both positively differentiate and improve confidence in Alaska seafood products. The nutrient and contaminant data will be valuable to the Alaska seafood industry, researchers, public health initiatives, state and federal government agencies, and consumer marketing programs. Full, final reports to NOAA have been submitted and accepted, with the project completed in good standing. ASMI and DEC have made immediate use of the data, including it as a part of numerous federal comments especially as it relates to contaminants. PFAS and Prop 65 regulations seem to be areas where this data will be most useful in discourse.

So far, partial reports have been utilized in comments for:

- PFAS in fish (FDA), in which we showed demonstrably minimal PFAS contamination.
- Dietary Guidelines for Americans (USDA) in which we showed the highly nutritious and minimal contamination present in all species measured.

- Inorganic Arsenic in Fish (USDA FAS) in which we demonstrated the minimal inorganic arsenic present in AK species.
- Executive Summary for circulation to ASMI reps and programs.

Work in several areas continues, as the project period timelines were concerning expenditure of federal data, and we determined that using every day of this was preferable as it allowed us to fill out the data as much as possible. Work continues on:

- Adapting the data into outreach materials (see below in support materials)
- Ongoing presentation of data across many events and venues (see below in trade education).
- Publication into peer-reviewed journals.
- The full data is available to the entirety of industry. We intend a larger blast to QA/QC departments, as some entities are still surprised to know this data exists and is defensible in use on discussions regarding c contaminant regulations.
- We've allowed a partner NGO to piggyback our existing lab contracts to perform the same nutritional analysis we've done on multiple flatfish species.
- Building hosting pages for data on ASMI/ADEC websites. **DEC contaminant data site is set to be live by end of year.**
- **Nutritional data has been accepted into USDA Foundation Foods Database, which was slated for release in October prior to Federal shutdown. We anticipate this release to occur as soon as shutdown ends. ASMI database of nutrition set to go live shortly after federal release.**
- **Drafting of articles for peer review is underway, the first of which (PFAS findings) is ready for submission to *Environmental Toxicology and Chemistry*.**

- **Oregon State University-Foundation for Food & Agriculture Research Grant: Recovery of Nutritional Food from Seafood Byproducts**

- The technical program contributed matching funds (**\$10,000 USD**) to the forthcoming study to recover protein from various seafood processing by-products with the purpose of developing viable, marketable food items. The study is set to occur over a span of three years with a total funding of \$667,570, half of which is comprised of matching funds. ASMI's matching fund is one of several supplied, with other contributing entities including Oregon State University, OSU's Food Innovation Center, Pacific Seafood Group, Seafood Industry Research Fund, Trident Seafoods, and the West Coast Seafood Processors' Association. The researchers (comprised of experts in food chemistry, nutrition, food processing, product development, and sensory evaluation) extracted, purified, characterized functionality, and assessed the nutritional content of the protein isolates of various species. The study seeks to reduce

discard of edible proteins from seafood processing, increase percentage of harvest utilization for human consumption, provide additional viable revenue streams to processors/harvesters, and increase protein availability. The nutritional efficacy and health impact of the generated protein isolates was also assessed in an animal model compared to protein isolates such as whey and soy. Subsequently, seafood protein isolate was utilized to develop multiple prototype products including dietary supplement products, novel food products, and food aid fortification formulations, with the culinary potential for products containing seafood protein isolates being assessed by a panel. FFAR recently issued full approval and released their funds (October 2021), and results of early stages are forthcoming. In March of 2023 OSU's primary researchers on the project and the students assisting presented early results for pollock which had numerous promising outcomes such as high-quality protein recovery from pollock and whiting processing to date. As of October, some of the barriers to inclusion of extracted wastewater protein in fish stick product have been overcome. Optimization of the extraction process chief amongst them, which was accomplished through testing of various sizes of nylon membranes. Different variations of formulation of fish stick were created, using multiple percentages of protein precipitate. Color difference compared to standard fillets were noted but corrected with inclusion of calcium chloride. The precipitates showed remarkable ability to gel with fillets. Another intriguing finding was that despite a lack of antioxidants and cryoprotectants being included in the fish sticks, this gelling ability remained and functional/flavor qualities remained despite freeze and thaw. Despite the precipitates having an elevated moisture content, non-blind sensory analysis at OSU's Food Innovation Center (FIC) yielded positive results with fish sticks being made and tested at various percentages of precipitate concentration, with the 10% formulation performing best. The next stage of the project is to up-scale production and perform a formal tasting at the FIC. As of April 2024, a 12-month NCE was instituted by the project leads at OSU, and graduate students responsible for previous portions have moved on after degree completion, leading to new students joining for the next sections. Due to some challenges observed with high moisture content in the protein concentrate, the team began drying of the wet protein concentrate and tested the dried protein isolate inclusion in the fish stick production, resulting in a more appealing end-product with no issues found throughout the formulation and cooking process. With reduced moisture content, the inclusion levels of dried isolate were reduced to 0.5 and 1% of fillet weight, which matches the protein content of 10 and 20% of wet isolate inclusion, respectively. 1% of the dried isolate inclusion was able to increase the protein content of fish sticks by 0.5 g per serving. The goal downstream is to further purify the protein isolate to allow increasing the protein content of fish sticks by 1g per serving to produce value-added products that utilize byproduct-derived protein. The researchers are doing in vivo animal trials to

test the nutritional efficacy of the protein isolate in supporting growth and investigate the potential impact on metabolic health in the animal model.

Formal panel sensory evaluation was conducted on the fish stick products incorporating 0.5 and 1% of dried isolate. The evaluation data were compiled and analyzed by Compusense software. The major findings from the panel evaluation are summarized below:

- a. Overall liking - there were no significant differences between the three products in overall liking, but they were all liked significantly less than their ideal and rated between “like slightly” and “like moderately” on average.
- b. Appearance/Color/Aroma Liking: While the control product was liked significantly more for internal color than the samples with added protein, there were no significant differences in overall appearance, external color or aroma liking between the three products.
- c. Flavor, salt level and aftertaste liking: All three products were liked statistically equally in the attributes flavor, salt level and aftertaste liking and rated between “like slightly” and “like moderately” on average.
- d. Texture liking: all three products were liked statistically equally in the attributes texture, firmness, moisture content and oil content liking.
- e. Aftertaste – the aftertaste of the 1% added protein formulation had a stronger aftertaste than consumers’ ideal fish stick. The 0.5% formulation was the closer of the two to their ideal.

To note, the inclusion levels of dried isolate were reduced to 0.5 and 1% of fillet weight, which matches the protein content of 10 and 20% of wet isolate inclusion, respectively. 1% of the dried isolate inclusion was able to increase the protein content of fish sticks by 0.5 g per serving. Researchers designed Zebrafish feeding trials to test the nutritional efficacy of the protein isolate in supporting growth and investigate the potential impact on metabolic health in the animal model. Zebrafish were selected as a model due to their rapid development, cost-effectiveness, and genetic similarity to humans. Zebrafish share many metabolic pathways and genes with humans including lipid metabolism, glucose homeostasis, and insulin signaling, which makes them an efficient model for studying human metabolic health.

The animal study protocol was submitted and approved by The Institutional Animal Care and Use Committee at Oregon State University,

which allowed the team to begin the animal trial. **They conducted more protein extraction from Alaska pollock fish frame to prepare the diet for the feeding trial and currently formulating and testing the pilot diet for the trial. Alaska Pollock Protein Concentrate (APPC) was collected through the use of the isoelectric solubility precipitation (ISP) extraction. The samples were freeze-dried and sent for proximate analysis to accurately account for the impact its addition would have on test diets. A full discussion of this section is available in a final report.**

Scholarly Output:

- **Education: Two MS students graduated, three undergraduate students trained**
 - **Presentation to peers and stakeholders**
 - **Oral: Pacific Fisheries Technologists 2023 (Awarded as the Best Student Oral Presentation 3rd place)**
 - **Poster: State of the Coast 2023**
 - **Two more presentations expected (Institutes of Food Technologists 2026, Pacific Fisheries Technologists 2026)**
 - **Manuscripts- Two manuscripts submitted (under peer review)**
 - *Comminution Methods for Biomolecule Extractions: A Case Study on a Fish-Processing Byproduct*
 - *Alaska Pollock Protein Concentrate as a Functional Food: Impact on Growth and Obesity in a Zebrafish Model*
 - **One manuscript in preparation**
 - *Consumer Response to Fish Byproduct Protein as an Ingredient in Fish Stick: Impact of Sensory Liking and Benefit Information on Purchase Intent*

- **University of Connecticut/Seafood Industry Research Fund – Alaska Salmon Consumption and Reduced Inflammation for Breast Cancer Survivors –**
 - We collaborated the Seafood Industry Research Fund (National Fisheries Institute) to support a study by the University of Connecticut to gather key information regarding dietary fish consumption patterns in breast cancer survivors experiencing symptoms of persistent pain and fatigue. The initial 2-year investigation uses the USDA dietary guidelines as a basis to assess the consumption of more fish consumption for improved dietary intake patterns for breast cancer survivors. Consumption of omega-3 fatty acid in fish, and not in supplements, is encouraged as a component of the Nutrition and Physical Activity Guidelines for cancer survivors. A specific

aim of the project has been to look at the effects of high and low DHA diets on inflammatory load and persistent pain and fatigue severity for breast cancer survivors. There were 180+ participants in the study who have personalized meal plans of frozen Alaska salmon fillets 2-3 times a week for a period of 6 weeks. Due to COVID closures from February 2020-December 2020, the study's recruitment phase was delayed and the finalization is was moved to May 2022 (a no-cost extension for data synthesis was granted) with a larger sample size than initially scoped (over 180 participants instead of 150). However, due to ASMI's continued support of the project, ASMI is also a named contributor on the secondary follow-up study examining the effects of seafood consumption of the gut microbiome in this same survivor group. The feasibility study entitled: "Feasibility of Investigational Procedures and Efficacy of a Personalized Omega-3 Dietary Intervention in Alleviating Pain and Psychoneurological Symptoms in Breast Cancer Survivors" was published in February, 2023 in Pain Management Nursing, available [here](#). Here, we reported that BCS in the high omega-3LC group had a significant decrease in pain ($p < .01$), perceived stress ($p < .05$), sleep ($p < .001$), depression ($p < .001$), and fatigue ($p < .01$) related to the fish intervention.

- Substantial efforts focused on cleaning and analyzing the gut microbiome data in a subset of 46 BCS. We developed an abstract for presentation at the American Oil Chemists Society Meeting in April 2023 (accepted) but needed to postpone due to unforeseen circumstances. Researchers plan to present this year and are currently working on the accompanying manuscript. To date, our results highlight that at baseline (prior to initiating the intervention) fish consumption was significantly associated with alpha diversity ($p=0.02$, mean servings/week (<1/wk, 11.8 ± 6 ; 1/wk 11.4 ± 6.5 ; 2/wk 11.9 ± 3.9 ; ≥ 3 /wk 21.0 ± 8.6). Bifidobacterium was significantly higher in BCS with reported fish consumption >1 serving per week ($p=0.03$). The Center for Epidemiological Studies Depression scale total score was significantly lower in BCS with reported fish consumption >1 serving per week compared to <1 serving/wk ($p=0.04$, <1/wk 13.9 ± 10.8 ; >1/wk 9.5 ± 7.3). This finding highlights the need for further education and outreach with BCS promoting increased fish consumption for better gut and psychological health.
- **The researchers are finalizing the manuscript on nutrition, immune and gut microbial patterns in breast cancer survivors Although we were originally targeting a Summer 2025 submission, the team did experience some unforeseen delays causing us to extend our targeted manuscript submission to December 2025. To date, they have concluded data analysis and continue to prepare the manuscript brief overview of the findings is as follows:**
 - Researchers submitted the baseline gut microbiome data for 45 breast cancer survivors included in the later cohort where stool samples were collected and funded under ASMI. The research interest has been in evaluating the dietary data (including omega-3

fatty acids and omega-6 to omega-3 ratio) in conjunction with the salivary cytokine data representing inflammatory response, and gut microbiome. To better understand the relationship of nutritional and immune factors with microbial communities, they performed a descriptive analysis of the BCS cohort's demographic and clinical characteristics, nutritional intake, cytokine levels, and gut microbiome. Operational Taxonomic Units (OTUs) or microorganisms grouped according to DNA sequence similarity on the genus level, were selected based on a specific filtering criterion for the microbiome data to ensure relevance and robustness in further analyses. Highlights of specific findings are as follows:

- the dietary balance of Omega-6 to Omega-3 fatty acids may influence gut microbiota composition differently, affecting these specific bacterial groups
 - There was also a significant correlation between Vitamin D levels and various OTUs from bacterial families and genera.
 - Omega-3 or ratio data did not show a significant association in terms of ordination
 - Significant associations were not identified between omega-3 or ratio and bacterial modules.
 - These findings highlight the intricate interactions among dietary intake, immune response, and the gut microbiome, laying the groundwork for a deeper exploration of how these dynamics affect human health.
- Researchers had previously had a manuscript under review entitled: *Dietary consumption patterns in breast cancer survivors: Evaluation of diet, supplements and clinical factors* –which was initially submitted to the Journal of the Academy of Nutrition and Dietetics. Of particular interest to ASMI and SIRF is that the majority of the BCS self-reported that although they consume fish (95.8%; n=91), when shellfish was excluded, participants consumed an average 0.16 (± 0.26) servings daily, with 61.5% (n=59) consuming 0 servings. This finding of low fish consumption is an area of interest given the high symptom burden (depression, sleep disturbance, pain and fatigue) in their cohort at baseline. Further compounding this issue of low fish consumption, the omega-6 to omega-3 ratio was high in the diets of the BCSs in our cohort ($M=7.96\pm 3.28$) and this highlights a need for improved fish consumption. This baseline dietary study that had also been submitted to Clinical Nutrition in October of 2023, and we received notice on January 3, 2024 that the article was not aligned with the journal and therefore declined. After careful review of reviewer's comments, the article was reviewed, accepted, and published in the European Journal of Oncology Nursing, available [here](#).
- **A 4th manuscript has been prepared where ASMI is named as a supporter that is ready for submission entitled: *Predictors of sleep***

disturbance in breast cancer survivors: The role of age, anxiety, estrogen therapy, and physical activity. The final version is under review with the UCONN medical director and upon approval, will be submitted to the Oncology Nursing Society. Although we did include the gut microbiome data as a component of the regression analysis initially, we removed the related discussion as alpha diversity (gut microbiome was not significant in the model.)

- **Oregon State University Food Innovation Center/University of Maine –Chef Sensory Evaluation of Frozen Alaska Seafood**

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- ASMI partnered with the Food Innovation Center at Oregon State University **to conduct a sensory evaluation of frozen Alaska seafood with chef participants.** Test data was collected using the Compusense data acquisition systems. Sensory test results were analyzed at the 95% confidence level and raw and summarized data is available in a summary report. Working with our research partners, an event at O’Maine Studios in Portland Maine was set up, titled the “Seafood Quality and Innovation Summit” to draw chefs and seafood producers. On March 20th 2023, 62 study participants attended the event which included sensory evaluation of Pacific halibut, sockeye, keta, and yellowfin sole. Testers were unaware of the species or the once-frozen nature of the products. A team of seafood-savvy chefs and culinary students under their tutelage simply prepared and the samples. Evaluations of the product were on average in the ‘excellent’ range, and through consultation with ASMI committee members we were able to tailor the questionnaire to obtain actionable marketing data relating to chefs as seafood consumers in addition to sensory questions. Currently, the researchers are working on publication of the data. In March of 2024, ASMI Technical presented the study’s data in a session at Seafood Expo North America, which was well-received. As a result, we have had speculative communication from culinary entities looking to add to or follow up this study by repeating its basic parameters in a non-coastal major US city. We have provided summaries of the findings to the ASMI marketing programs for their knowledge in engagement with chefs. **This study was presented at Pacific Fisheries Technologists Conference, and abstracts are under review. ASMI assisted the researchers in funding necessary to keep study out from behind paywalls. Follow-up study is currently in early design, we are finalizing locations in one of: Chicago, Phoenix, New Orleans, or Las Vegas. Likely to be executed in late Early FY27.**
- **Events narrowed to**
 - **Southern Smoke Festival**
 - **International Corporate Chefs Association**
 - **Culinary Institute of America – Menus of Change**
 - **Flavor Experience**
 - **Kinetic 12**

- **Pebble Beach Food and Wine**

- **Oregon State University- Consumer Acceptability and Shelf-life Assessment of Frozen Seafood**

- ASMI technical supported a forthcoming study by OSU which is funded by a Saltonstall-Kennedy Grant **to determine shelf life (nutrient density, oxidation, texture) and consumer acceptability of three frozen seafood species stored in two different freezer types (commercial/industrial and home), and to develop and pilot educational outreach efforts about frozen seafood.** The two of the three species chosen by the advisory committee (coho salmon and sablefish) are relevant to Alaska seafood. 3, 6, and 12, 18, and 24 month-evaluations have occurred in both sensory and non-sensory tests, with overall positive feedback on product quality and acceptability among the 360 individuals surveyed, noting no notable quality loss among the samples. Sablefish has improved acceptance to 12 months, and held at that acceptance level since. As of December 2023, the reporting data was finalized and submitted to the NOAA SK managers, and researchers are in the process of publishing their findings. Additionally, based on findings from sablefish in particular, follow-ups are being planned to expand on the reasoning behind the increased sensory acceptance over time. **ASMI Technical has been collaborating with the ASMI domestic team to distribute high level findings and summaries on the longevity of frozen product to retailers and foodservice providers, with summary sheets in the works, which include the customer profile data that was also collected as a part of this work. We are also evaluating the best way to approach regulatory authorities (for example some certifying bodies have 6 months of storage as the threshold for certification maintenance).**
 - ASMI Technical has used this study to finalize a new 1-pager format for ASMI study findings, and is available [online](#).

-NEW NOAA SK Grant: Maximizing utilization and value of Alaska seafood through high valorization of production side streams, re-shoring of value-add processing and neutral storage facilities

- Both ASMI NOAA SK Grant full proposals submitted in 2023 were successful, each receiving the new maximum award of 500k USD. Both projects are on delay until NOAA is able to sort internal funding issues, but both are considered accepted proposals. We were asked to re-submit the full budget in late October 2024 for a start date of January 1, 2025.
- ASMI Technical is executing one of the two, aimed at creation of a ‘next steps’ for value-added specialty products utilizing Alaska seafood, evaluating existing product creation methodologies from high-value sectors and products developed at the Iceland Ocean Cluster based on the Alaska federal delegation’s interest in

extending work of this type. ASMI Technical is partnering with the Iceland Ocean Cluster, Alaska Fisheries Development Foundation, and the University of Alaska-Fairbanks' Blue Economy Center as the key research group.

The project will seek to evaluate which products/processes could be most readily implemented in Alaska based on current processing as well as create a determination matrix for analyzing fiscal prudence of any processing or infrastructure extensions required to generate any new items. The project is aimed at maximizing the value of Alaska seafood species by increasing the utilization percentage of all species where viable and determining feasible new production and processing which may allow entry to new markets without changing total yield. It is the project's aim to arm the industry with information in making any determinations about entering into new product development, including easier adjustments such as oils/meals and pet food, all the way up to pharmaceuticals. An advisory committee has already been formed. This projects key objectives include:

- An updated snapshot of what sidestream products in what amounts are currently being produced, and what markets they are serving,
 - Identification of key functional characteristics of Alaska's species based on previous SK lab work, examination of literature, and testing with partner laboratories. It is our intent to know the tonnage landed of valuable compounds such as marine collagen are landed on a per species basis.
 - **This work is underway, due to overlapping projects from research partners. Preliminary reports are available on request.**
 - Match characteristics with existing sidestream products produced currently by the Iceland Ocean Cluster.
 - Determine the feasibility of all products examined with a ranking system for industry's benefit in evaluating their processing decisions.
 - Generation of a roadmap to implementation of all viable products,
 - Documentation of challenges and hurdles, with plan for ASMI Technical engagement on any regulatory barriers.
 - Conceptualization of business models and infrastructure investments required.
 - Piloting of key products.
- Re-shoring of value-added processing will be an aspect evaluated by the research partners for this project.
 - We presented this project to the Arctic Circle Assembly in October 2024, which garnered industry from collaboration with additional entities in New England such as Tufts University, the Iceland Embassy to the United States, and the Gulf of Maine Research Institute who all wish to aid in extending the project's scope and scale.
 - **Study was also presented to the Alaska Food and Farm Caucus**

- The research team used the trip to Iceland for Arctic Circle to also meet and tour with key seafood and sidestream entities and relevant authorities in Iceland. Meetings/tours were had with:
 - Marel (processing tech)
 - Hedinn (processing tech)
 - Baader (processing tech)
 - North (marine biotech (primarily enzymes, bones))
 - Eylif (nutraceuticals)
 - Hafró (federal marine and freshwater institute)
 - Mátis (federal food research and biotech)
 - Kerecis (acellular fish skin pharmaceutical grade)
 - Lysi (fish oil and meal, nutraceuticals)
 - Brim (fish processor)
 - Aquatic (food safety and processing)
 - Hefring Marine (algorithms for maritime use)
- **NOAA SK Program delays have affected this project. Initially this was communicated as being a small delay, but as of November 2025 the project is still ‘pending award.’ We have not been given a timeline by NOAA as to when funds will be released.**
- **It was notable that a project performing the functions of this study was recommended by the ASMI Customer Advisory Panel.**
- **ASMI Technical is working at the Board’s request to organize a demonstration/dialogue event with major technologists producing seafood processing equipment. This effort is strongly linked to the ongoing SK Grant.**

Forthcoming Carbon Footprint Study

- ASMI Technical is in the scoping stage with the University of Washington’s Dr. Jessica Gephart on the analysis of key Alaska species’ carbon footprints. The proposed project would involve compiling industry-sourced data to estimate greenhouse gas emissions for select Alaska fisheries of interest. The specific fisheries will be determined through consultation with the Alaska Seafood Marketing Institute members and will depend upon data provision by the partners. Example fisheries discussed to date include Pacific cod, halibut, and sablefish. These fisheries would capture most of the range in previously estimated greenhouse gas emissions, where the group including halibut falls at the upper end of the range of aquatic foods, but the group including cods falls at the low end of the range. However, these estimates represent the global averages for groups of species (ISSCAAP groups).

In this project, we will estimate greenhouse gas emissions specific to the individual fisheries of interest and by gear type (where applicable, and obfuscated in reporting outside of ASMI). The resulting values would then be able to be

compared to the global average for the species own group, compared across other farmed and wild aquatic foods, and compared to industrially produced chicken.

The key data required for estimating fishery greenhouse gas emissions is the vessel fuel use intensity (e.g., liters of fuel consumed per ton of round weight landings) for each fishery record. A fishery record refers to a vessel or multiple vessels for which specific species, gear, and fuel type can be associated. To allocate emissions among species in multi-species fisheries, both landings quantity and value are needed. To allocate emissions appropriately to primary and any co-products, processing yields and product values are needed. After calculating fuel-related emissions for each fuel use observation, an average of 25% additional emissions was assumed to account for non-fuel sources such as refrigerant loss and manufacture of gear, following Parker et al. (2018).

Depending on data availability, the non-fuel emissions could be informed by industry data. Finally, for each fuel use record, we apply weightings to reflect representativeness of observations within the industry. These weightings include species-specific landings and gear-specific landings within each species and estimated rates at which each species was destined for human consumption as opposed to industrial use for fish meal and fish oil. These values can be drawn from literature values or can be informed by industry data. The global mean for the species ISSCAAP group will serve as the prior in the Bayesian model, which will be updated with the newly provided data. The output of the model, informed by these data, would be species-specific greenhouse gas emission estimates for Alaska fisheries, with comparisons to the global averages for other farmed and wild species, plus industrial chicken. All estimates will be expressed using both mass and economic allocation and in terms of different functional units (live weight equivalent and edible portion). Each estimate will include the uncertainty in the estimated mean. We have asked each ASMI committee chair and vice chair to participate as desired in helping to scope the project, as we establish the species and budget. Because this work is largely formulaic, adding species is fairly simple so long as industry wishes to participate and provide data, and we want to be diligent in the scoping effort since this data's request was ubiquitous across species committees.

We are finalizing the contract with UW, scoped to ~120k over 2 years, with work set to begin in FY26. **Research team will be meeting with ASMI Technical Committee at All-Hands to discuss data acquisition and appropriate masking of gear types and regions to isolate data by species averages and not provide competitive advantage to one over another.**

Supplied Materials

- **ASMI Species Fact Sheets**
 - o The technical program is still producing a suite of Alaska seafood species fact sheets for buyers of Alaska seafood. We have completed the majority of Alaska species and will be moving forward to complete the few

remaining species for which replacement fact sheets are needed and developing sheets for species not previously covered in this material suite. These are available in print to order as well as a download pdf on the .org website. No new sheets were finalized this year, but updates to several species were finalized on a rolling basis as re-prints were done. Per asks from the whitefish committee, we will be working to isolate and differentiate the flatfish species based on nutrition values which were generated by a partner NGO who is utilizing our existing lab contracts from the nutrient/contaminant database. We are checking the data presently, which appears to be far superior to existing flatfish species information. Per requests from committee members, a Pacific Herring sheet draft is in late development. This sheet is to be used in the event Pacific Herring fisheries pivot to producing food for human consumption. Timing of this sheet has been longer due to lack of a human-consumption fishery and translation checks with OMR's in Japan who have an existing version that requires fact-checking.

- **Partnership: Alaska Department of Fish and Game**

- ASMI Technical has initiated a more direct relationship with ADFG as a result of that organization's need for improved capability to reach stakeholders and consumers on fisheries topics and their lack of a communications team or budget. We had previously worked to finalize sheets on crab management and Fukushima radiation, and now are working on bycatch. **We are working with ADF&G's newly created Director of Communications as well as the ASMI Communications team on outreach on this topic, including a web page and fact sheets.**

- **ASMI Technical Fact Sheets**

- We are developing fact sheets on technical topics that relate to Alaska seafood. These are business-to-business and business-to-consumer fact sheets are for use by ASMI programs as well as industry and trade relations. We have completed hatchery, chalky halibut, and frozen quality sheets previously, as well as internal-use only jellied sablefish. An internal only 'smaller specimens' draft was created but deemed as not needed at this time, though it may be revisited if questions on this topic return. ASMI is working with ADFG on fishery related sheets, with a crab management sheet, and an overview of Fukushima radiation and its irrelevance to the safety of Alaska seafood having been finalized (see Trade Education section below or partnership details above)
- **NEW this year, we are creating 1-pagers for the communication of study findings from Applied Investigations for circulation and use by marketing programs. A finalized version for the Frozen Seafood Shelf-Life study is available online as discussed in Applied Investigations above. Similar items will be forthcoming for the**

nutrient/contaminant study, the breast cancer study, and the Chef's frozen seafood acceptance study.

- **Dietetic Partnership: Roxana Ehsani, MS, RD, CSSD, LDN**
 - Roxana is an experienced dietitian operating primarily in the functional nutrition space focused on sports nutrition. She is on the medical review board of numerous prominent health organizations, is an Adjunct Professor of Sports Nutrition at Virginia Tech. She is a trained media spokesperson and has previously worked with the ASMI Communications Program. She will be assisting in the creation of new ASMI nutrition materials, developing functional recipes, and serving as a brand spokesperson.
 - Roxana has been invaluable in creating numerous nutritional materials (see below).
 - **Roxana has also served as an ASMI spokesperson and media contact for several new efforts (see trade education).**

- **ASMI Website**
 - ASMI Technical continues to vet new information as it is added to the website, and to update existing material as information changes.
 - As the SK Project has wrapped, we are currently working with the ASMI comms and Sitecrafting teams to integrate the nutrient and contaminant information into new pages on the website. The intent is to have simple but updated nutrient information on the main site, but only a single click away from the full dataset which will be housed under the industry portion of the site.
 - **DEC and ASMI both have created formats and pages for hosting this data which are not yet live. DEC's is nearly finalized and is a living document navigable by both species and contaminant. Contaminants will go live first, and ASMI's nutrition information will follow once finalized on federal databases after the shutdown ends.**

- **ASMI Brochures**
 - With the resumption of all key commercial crab fisheries, we've begun initial efforts to update existing Buyer's Guides, starting with Shellfish which had been delayed until all fisheries resumed.

- **ASMI Quality Material**
 - We are developing associated tutorials on aspects of quality handling for different gear types and species (i.e. how to bleed, how to ice, how to transport) at the harvester level. The first project for this, a bleed tutorial, was previously completed, and discussions are underway for identifying relevant topic materials based on tech committee input. Based on discussion with the Technical Committee, we are engaging with Dr.

Christina DeWitt of OSU and the ASMI Technical Committee to adapt her materials for first receivers, as well as reaching out to vessel captains and tender operators for their needs on crew education since it is the committee's opinion that these are often the first training providers.

- As a result of the SK Grant, new outreach materials related to lack of contaminants are being generated, for example, our mercury and selenium fact sheet now features the amounts of each found in the study, highlighting how low the mercury amounts are relative to regulatory limits. This sheet is available online.
- **We are developing a new sub-suite of quality stickers/posters based on the original quality harvesting suite, but aimed at education for the in-store seafood counter or as general quality depending on topic. Working with Juneau artist Pat Race, we are developing 7 posters including:**
 - **'Clear Eyes, Full Totes, Can't Lose.'**
 - **Subtitle: Display fish eyes should be bright and clear**
 - **'Keep 'Em separated'**
 - **Raw and cooked product should remain separate**
 - **'Belly Down'**
 - **Drain melt away from the fish**
 - **'Wash Hands'**
 - **Wash hands. Put on gloves and hairnet. Wash hands again.**
 - **'First In, First Out'**
 - **Display fish on clean, crisp ice.**
 - **'Handle with Care'**
 - **Rotate stock in storage to maintain freshness and quality**
 - **'In the Zone'**
 - **Fresh seafood 30 to 34 F**
 - **Frozen seafood -10 to - 20 F**
 - **Drafts are currently available and being finalized.**
- **Working with Technical Committee to update the 'ASMI Salmon Quality Specifications and Grades'**

- **ASMI Nutrition Material**

- As part of the SK grant, the new nutrient data developed will be used to update Alaska nutrition materials to reflect new values. This information will be used in outreach efforts and to differentiate wild, Alaska seafood from competitors harvested or farmed elsewhere.
- We are generating a video series applying dietetic knowledge to Alaska seafoods with RDN Roxana Ehsani
 - We have finalized a video on [Seafood and Mercury](#) (with accompanying fact sheet) and on [Seafood and Pregnancy](#), working with the comms team, both are shortened to 1 minute for distribution on social channels.

- **New videos on Vitamin D and Zinc are now final and live on social media**
 - **Forthcomings include mood boosting and stress relief**
 - **New format is limited to 45 seconds and be used for reels/TikTok**
 - **We are near final on versions for:**
 - **Vision health**
 - **Skin/hair/nail health**
 - **Immunity boosting**
 - **These are viewable in draft [here](#).**
 - **We have created a comprehensive ‘Claims Guide’ for guidance as to what labels may be legally included for products on a per-species basis. This also includes negative claims (IE, claims of absence of added sugars, etc).**
 - **This document is available internally and to all Alaska Seafood Producers on request**
 - **A simple 1-pager was also included and is available in print and [online](#).**
 - **A minor edit is underway for one species which should be live by All-Hands.**
-
- **Additional ASMI Materials**
 - Working with other ASMI programs to develop consumer-aimed edits of new technical materials, especially video content, functional nutrition recipes, and quality-focused guides.

Trade Education

- Provides support for KSMSC training including:
 - HACCP, Better Processing Control School, Alaska Seafood Processor Leadership Institute, Smoked Seafood School, and Sanitation Workshop.
- Provided federal comments:
 - To FAS regarding *vibrio* regulations in the EU, Antibiotic use in hatcheries, proposed rules on fish products in Vietnam.
 - To NOAA regarding Draft Supplemental Programmatic Environmental Assessment (SPEA) for Fisheries Research Funded by the Alaska Fisheries Science Center
 - **To the FDA regarding PFAS in fish (or lack thereof)**
 - **To the USDC regarding alterations to the US standard for fish fillet blocks**
 - **To the USDA as part of the formal comment on the Dietary Guidelines for Americans**
 - **To the FAS regarding inorganic arsenic content in fish**
 - **To the USTR regarding non-tariff barriers**

- **Provided comments to State of Alaska:**
 - o **To Alaska DEC regarding the lack of need for chlorination in new tender vessels which are making their own ice.**
 - Technical Director was a guest speaker at Seafood Product Association's industry event 'From Catch to Processor: Best Practices for Good Handling' event.
 - Member of the National Fisheries Institute and Seafood Products Association, serving on the latter's Technical Committee.
 - **ASMI's Technical Director was the fishery representative at a panel discussion on climate at Alaska's Forum on the Environment.**
 - Engaged with industry members for education regarding new in-plant requirements for control of metal inclusion hazards by NOAA.
 - Continued and ongoing discourse with NOAA/USDC on behalf of industry on numerous problematic topics
 - Supporting SeaGrant effort to revitalize 'Care and Handling of Salmon: The Key to Quality' for industry use.
 - o The Washington and Alaska SeaGrant organizations are collaborating to revitalize this key piece of quality training material which ASMI is the current owner of. We expect the new version to be available before next salmon season.
 - Sponsorship of Jae Park/OSU's surimi school.
 - Sponsorship of Seafood Nutrition Partnership's (SNP) State of the Science Symposium.
- Articles were informed by information or interviews with/from ASMI Technical, including
- [Food & Wine Article on salmon fishing](#)
 - [Grocery Dive article on frozen seafood](#)
 - [Restaurant Dive Article on frozen seafood](#)
- **Technical Director is now serving on SeaShare Evaluation Committee, evaluating bids for participation in SeaShare donation program in Alaska communities.**
 - **Technical Director is now serving on the Alaska Research Consortium Board, in order to take a more collaborative approach to applied investigations efforts with other research entities in the State.**

- **Technical Director served as a Panelist for Future-Proofing Seafood Panel, organized by Alaska Fisheries Development Foundation during One Ocean Week.**
- **ASMI Technical is presenting at Pacific Marine Expo about ongoing efforts**

Other Activities

- The technical committee met in-person and on Zoom in April 2025 to approve the budget and discuss projects for FY25.
- Created and/or updated internal ASMI talking points on technical topics. Depending on the topic, these talking points were either shared internally only with market representatives and ASMI staff or distributed to relevant members of industry and/or their supporting NGOs. Topics included:
 - Alaska seafood and radiological contamination (Fukushima),
 - Bering Sea opilio crab stock reduction,
 - Bycatch and fishery management
 - FDA Seafood List Process
 - **Halibut Management and Stock Health**
 - **Chinook Salmon Endangered Species Act Evaluation**
- **Met with researchers responsible for new study showing trace elements of endangered shark DNA in surimi products, to better understand the study and its results. Subsequently connected pollock producers with researcher so they can check if their own brands were included.**
- ASMI Technical supports day-to-day vetting of information utilized, and materials produced by ASMI marketing programs.
- ASMI Technical serves as the primary public contact on technical issues or questions being sought by market representatives, industry members, and the general public.