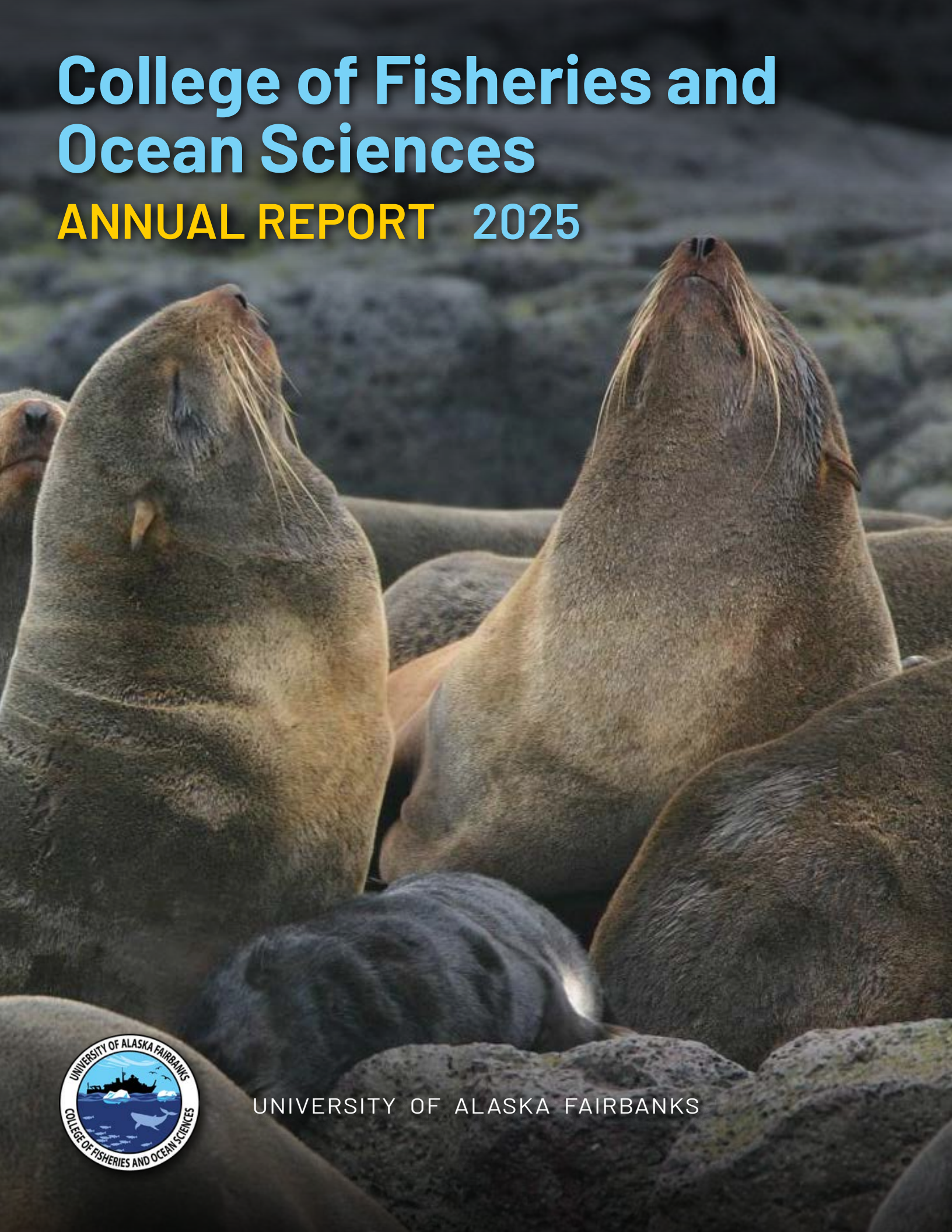
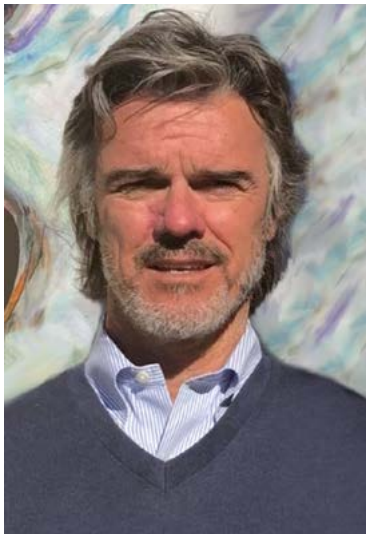
# College of Fisheries and Ocean Sciences

## ANNUAL REPORT 2025



UNIVERSITY OF ALASKA FAIRBANKS

# Message from the Dean



In our 65th year of operation, the UAF College of Fisheries and Ocean Sciences has become the largest combined research and academic unit in Alaska. CFOS has over 450 faculty, staff and students engaged in cutting-edge research and education programs based in six locations across the state. A key part of our mission is supporting the needs of Alaska, the nation, and the international community with knowledge and understanding of Alaskan and Arctic waters and ecosystems.

Over this past year, we welcomed a growing student body and new faculty and staff to CFOS. Undergraduate enrollment again increased significantly, more than doubling to over 160 students in the past four years. Our graduate programs also continued an upward trajectory to over 140 students enrolled, representing another year of double-digit growth. These future graduates will join over 1,000 alumni as they seek to advance their careers in fisheries, marine policy, marine biology and oceanography. I am proud of all our dedicated faculty and staff who support the training of these future leaders in aquatic ecosystem sciences.

We are excited to have hired two new faculty this past year. Thilo Klenz was appointed research assistant professor in the Department of Oceanography, and Krista Oke was appointed tenure-track assistant professor in the Department of Fisheries. We continued to hire staff to support our education programs, research activities and ship operations. We also made several new appointments to the Advisory Council.

CFOS is widely recognized as a research powerhouse. We are engaged in a range of field and lab projects — from numerous individual research studies to large, multidisciplinary programs led by our researchers. Regarding major research facilities, a highlight is that the National Science Foundation has directed R/V *Sikuliaq* to support research off Antarctica in early 2026 — our ship operations now extend from northern to southern hemisphere polar waters. During the past year, we also conducted detailed geotechnical surveys and related fieldwork in our ongoing pursuit to modernize the Seward Marine Center as the nation's Arctic gateway.

Impressive student enrollment trends, expansion of our research portfolio and oceanographic reach, and a notable 33% increase in total revenues underscore the growth, breadth and depth of our diverse academic and research programs and major facility operations.

I welcome your engagement and invite you to learn more about the innovative work being conducted by our dedicated community of students, staff and faculty.

S. Bradley Moran
Dean, College of Fisheries and Ocean Sciences

# Contents



View of a sunset from R/V *Sikuliaq*.
*Photo by Gabe Matthias.*

# New Faculty Appointments

## Thilo Klenz

Originally from Kiel, Germany, Thilo Klenz joined CFOS in fall 2017 as a Ph.D. student in Physical Oceanography. Since graduating in 2023, he has worked in the Oceanography department, first as a postdoctoral scholar and now as a research assistant professor of oceanography. With an observational background developed on many research cruises in the subpolar and tropical Atlantic and Pacific Oceans, Arctic Ocean, and Antarctica, Klenz utilizes satellite-tracked surface drifters, autonomous underwater gliders, and shipboard observations to better understand multiscale ocean dynamics and energy transfer from the largest to the smallest scales. Additionally, Klenz incorporates ocean circulation models into his research to address questions that are difficult to answer using observations alone.

In his free time Klenz enjoys hunting, fishing, cooking, and building an Alaskan life with his wife and their Bernese Mountain Dog, Odin.

"I initially came to Alaska to combine my passions for oceanography and life in the North. I decided to stay, because I see incredible potential for cutting-edge research to address some of the many unanswered questions in this fast-changing and dynamic environment."

## Krista Oke

Krista Oke will join CFOS as an assistant professor in the Fisheries Department in May 2026. As an evolutionary ecologist with a keen interest in fisheries, she seeks to better understand how fish respond to environmental change and how their responses can impact fisheries management. Oke works directly with stock assessment authors to incorporate ecosystem information into stock assessments.

Originally from Newfoundland, Canada, Oke received an honors degree from Memorial University of Newfoundland and a Ph.D. from McGill University in Montreal, Quebec. She first came to Alaska to do field research on salmon in graduate school and has lived in the state for the last eight years. In her free time, Oke enjoys snowboarding, doing volunteer trail maintenance with Juneau's local nonprofit Trail Mix, and hiking with her dog, Killick.

"Alaskan fisheries are seeing severe impacts from climate change, and it will be important to continue finding ways to incorporate ecological understanding into fisheries management to help fisheries adapt. I can't imagine a better place to do this work than CFOS, and I'm very excited to join the

# New Advisory Council Members

## Jamie Austin

James "Jamie" Austin Jr. has been a research scientist specializing in marine geology and geophysics for over 46 years. He spent more than four years conducting research at sea on 31 different vessels. His work has spanned the world's major ocean basins, from the Arctic to the Antarctic, and includes two stints as co-chief scientist on the R/V *Joides Resolution*. Austin has chaired numerous scientific ocean drilling committees and ran the development program for the American Geophysical Union. A native of the New York metropolitan area, he resides in both Austin, Texas, and Chilmark, Massachusetts.

## Robert Byrd

Robert Byrd has over 40 years of experience in design, fabrication, installation and removal of marine oil and gas facilities. A former U.S. Coast Guard officer, he has held positions with international marine engineers and contractors, as well as the Norwegian Hydrodynamics Laboratory. Byrd was an original principal and founding partner in TSB Offshore, Inc., a company specializing in oil and gas facility decommissioning. Byrd received a Meritorious Service Award this year from UAF, which recognizes significant public, academic, volunteer or philanthropic service. Since 2012, the Robert Byrd Award has supported CFOS graduate students by providing funding for conferences, research supplies and lab analyses. He resides in Houston, Texas.

## Craig Dorman

Craig Dorman attended Dartmouth College on a Navy scholarship and remained in naval service until retiring with the rank of rear admiral. His naval career included operational tours and command in Naval Special Warfare, as well as management of oceanographic and antisubmarine warfare research and development programs from Washington, D.C. Upon leaving the Navy, he served as director of the Woods Hole Oceanographic Institution and later held leadership positions for the Office of Naval Research, the Applied Physics Laboratory of Pennsylvania State University, and as the vice president for research at the University of Alaska. Dorman retired from UA in 2007, and lives in White Stone, Virginia.

## Gordon Kruse

Gordon Kruse focused on applied fisheries research and management during his 33-year career in Alaska. He served as the statewide shellfish biometrician and the first chief marine fisheries scientist for the Alaska Department of Fish and Game before joining the CFOS Department of Fisheries as the President's Professor of Fisheries. Since retiring as professor of fisheries emeritus in 2018, Kruse has remained active in science, serving as science advisor to the Bering Sea Fisheries Research Foundation and on the *Exxon Valdez* Oil Spill Trustee Council's science panel. He lives in Corvallis, Oregon.

# Academics

## Demonstrating a strong commitment to growth

The sustained growth of our academic programs during the past few years has contributed to the stability of CFOS and highlighted our commitment to its academic mission. Of note this past year is continued strong enrollment in our undergraduate and graduate programs (see pages 7-8). In response, CFOS initiated academic reinvestment initiatives to support faculty and better serve students. Starting in fall 2024, faculty teaching high-enrollment courses were able to hire student graders for their courses. This ongoing initiative provided not only support for faculty, but a new source of income for qualifying CFOS graduate and undergraduate students. Other academic reinvestment initiatives are scheduled to be rolled out during FY26 and FY27.

Our commitment to CFOS academics is also reflected in funding support for students. This past year, numerous CFOS faculty and students successfully obtained institutional funds through the University's R1 initiative, which aims to elevate UAF to the top tier of research universities. Five students received funding through UAF's Undergraduate Research and Scholarly Activity program, and CFOS faculty led a new program that will support 12 Ph.D. fellowships starting in spring 2026 (see page 4 for details). This program will bring highly rated applicants into the three departments.

CFOS is one of the few units at UAF with an academic office that supports a full-time academic manager and a full-time undergraduate advisor and recruitment coordinator.

**Students in the Marine Biology Field Course collect intertidal samples near Kasitsna Bay.** ***Photo by Hannah Gerrish.***

## EMERGE Alaska program will support new doctoral students

A new graduate fellowship program funded by the National Science Foundation will support 12 new CFOS Ph.D. students starting in May 2026. Areas of study for the EMERGE Alaska program (Enhancing Marine Ecosystem Research and Graduate Education in Alaska) will include fisheries, marine biology, and oceanographic research.

EMERGE Alaska will bring a new cohort of highly qualified graduate students to CFOS: The fellowship is for those who have recently received an "honorable mention" ranking in their application for the highly competitive NSF Graduate Research Fellowship. The new cohort of graduate fellows will provide a large boost to our already strong graduate programs, which during the fall 2025 semester had a combined enrollment of nearly 50 Ph.D. students.

A major barrier to bringing new Ph.D. students into CFOS graduate programs is funding availability. The new fellowship program will provide $1.9 million to UAF for the support of three years' worth of cost-of-education allowance and yearly stipends for the graduate fellows. The award can be spent over a 5-year period.

Because of the selective requirements for the program, most of the fellows will likely be from outside Alaska. That expected influx of students could provide a long-term benefit to the state, since most CFOS graduate students from the Lower 48 remain in Alaska after graduating. EMERGE Alaska will also support UAF's larger goal of achieving R1 research status, which includes a threshold of 70 doctorate degrees awarded per year.

"EMERGE Alaska's 12 highly qualified fellows will be a great asset for CFOS, for the university and for the state," said Assistant Professor of fisheries Jessica Glass, who is leading the project.

The funding comes through an NSF EPSCoR (Established Program to Stimulate Competitive Research) grant, which targeted 28 states and territories, including Alaska, with funding to strengthen scientific endeavors.

## Experiential learning and awards

As part of their academic degree requirements, the following undergraduate students completed experiential learning at various agencies and organizations: Micah Barber, Bryce Bateman, Blake Battcher, Esther Bean, Ayla Benson, Tyra Best, Madysson Bouchard, Archer Bowles, Ashley Burnette, Sydney Card, Rory Claussen, Jack Cook, Leah Cotter, Emery Cruz, Isaiah Dela Cruz, Jocelyn Curry, Conner Fish, Dylan Fraioli, Allison Guzman, Felicia Holman, Travis Jahahn, Andrea Kilborn, Keet Lorrigan, Haley Palma, Kat Quigley, Emma Reichi, Nicholas Rimelman, Travis Russell, Maya Russin and Cameron Walker.

Their work included partnerships with the Alaska Department of Fish and Game, Douglas Island Pink and Chum Hatchery, Coastal Marine Education and Research Academy, Community Coastal Experience, CFOS (Andy Seitz), Minorities in Shark Sciences, U.S. Forest Service, Bristol Bay Native Association, Croisieres AML and AIMM Portugal.

CFOS undergraduate and graduate students also received numerous awards for their academic, research, leadership and service achievements. Congratulations to our students for their hard work during the past year.

Maya Russin surveys a Resurrection Bay beach during the August 2024 oceanography field course. *Photo by Steven Dykstra.*

## Graduate Awards

### DEAN'S CHOICE AWARD
- Josianne Haag

### DEAN'S GRADUATE RESEARCH ASSISTANT AWARD
- Savannah Sandy

### NORTHERN GULF OF ALASKA AWARD
- Scott Chandler • Alex Borsky • Sof Fox • Chris Guo

### RASMUSON FISHERIES RESEARCH CENTER FELLOWSHIP AWARD
- Alorah Bliese • Josianne Haag • Lillian Hart
- Chelsea Campbell • Julia Matteucci • Noelle Picard

### ROBERT AND KATHLEEN BYRD AWARD
- Alorah Bliese • Chloe Kotik • Noelle Picard
- Julia Matteucci • Zach Vayder

### KASITSNA BAY LAB SUPPORT AWARD
- Zach Vayder

### HOWARD FEDER AND DAVID SHAW GRADUATE STUDENT SUPPORT FUND AWARD
- Josianne Haag • Alorah Bliese • Noelle Picard
- Zach Vayder • Sydney Wilkinson

### UA FOUNDATION SCHOLARSHIPS AND AWARDS
### Crowley Scholarship
- Keet Lorrigan • Ayla Benson

### Sport Fish Conservation Award
- Cameron Walker

### Dieter Family Marine Sciences Research Scholarship
- Sydney Almgren

### Donald Hood Memorial Scholarship
- Chloe Kotik

### Frances "Bud" Fay Memorial Scholarship
- Chloe Kotik

### Ken Turner Scholarship
- Chloe Kotik • Sydney Almgren

### Oscar Dyson Memorial Scholarship
- Ashley Burnette

### Goering Family Fellowship
- Rebecca Lavier

### Al Tyler Memorial Scholarship
- Saria Khalilallah

## Undergraduate Awards

### DEAN'S CHOICE AWARD
- Linnaea Doerner

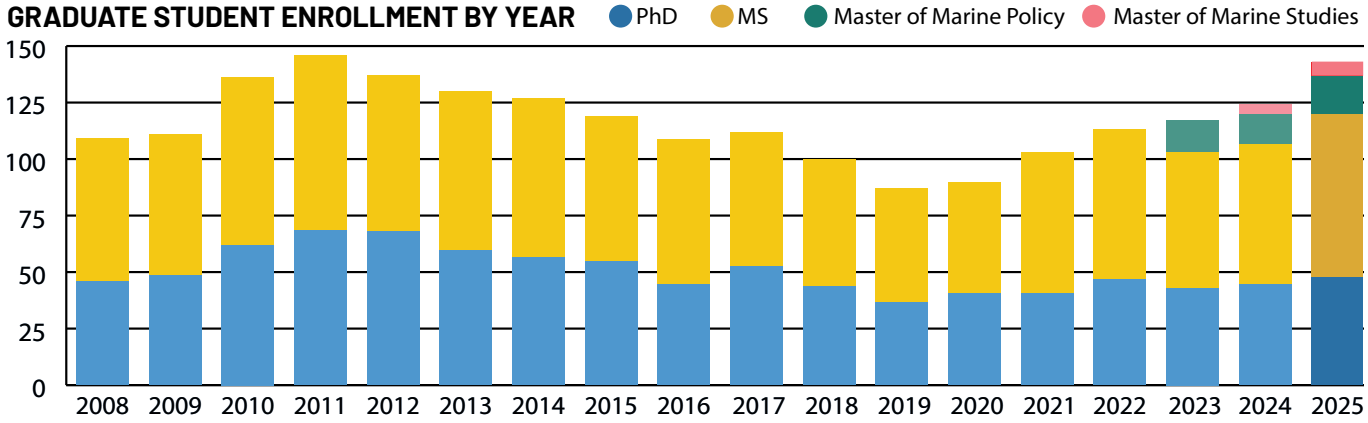
### Outstanding CFOS Academic Award
Freshman: Sam Cheng
Sophomore: Rachel Cox
Junior: Rory Claussen
Senior: Tony Blade

### URSA Project Award
- Rory Claussen

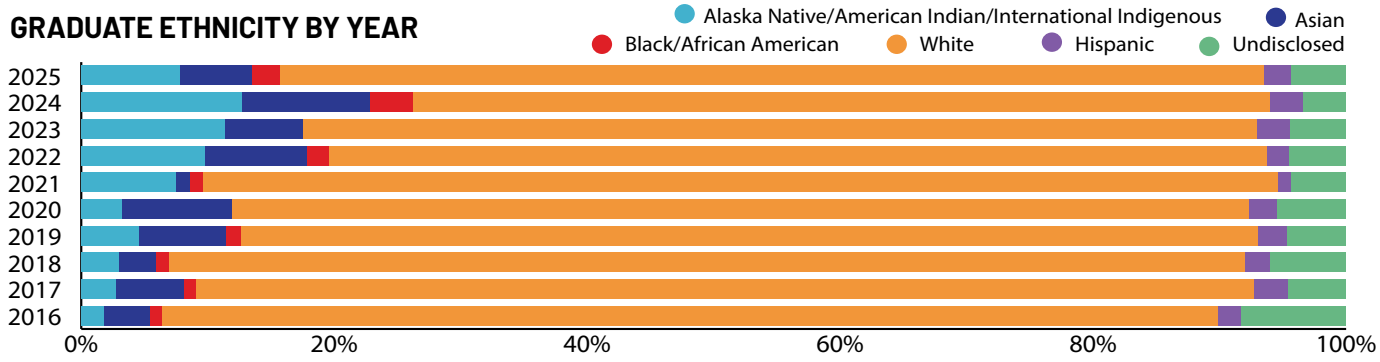
### URSA Internship Award
- Micah Barber • Haley Palma • Ashley Burnett

### URSA Travel Award
- Linnaea Doerner

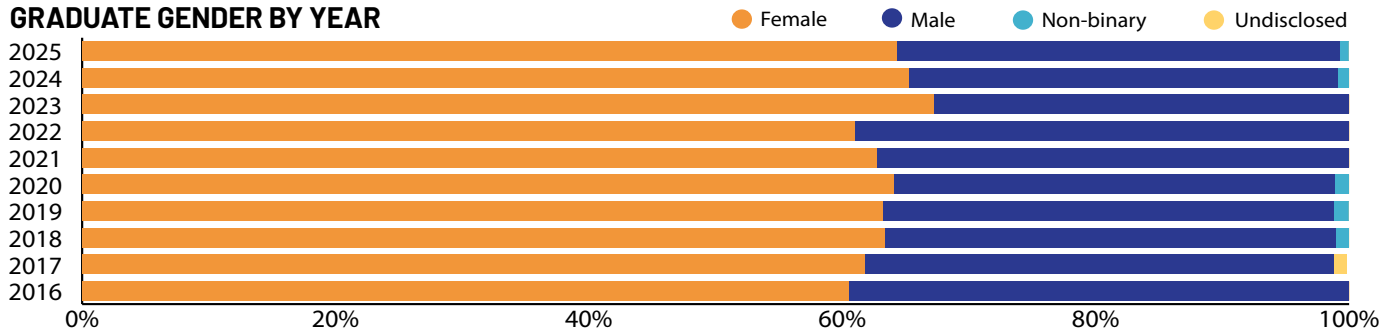
## GRADUATE STUDENT ENROLLMENT BY YEAR



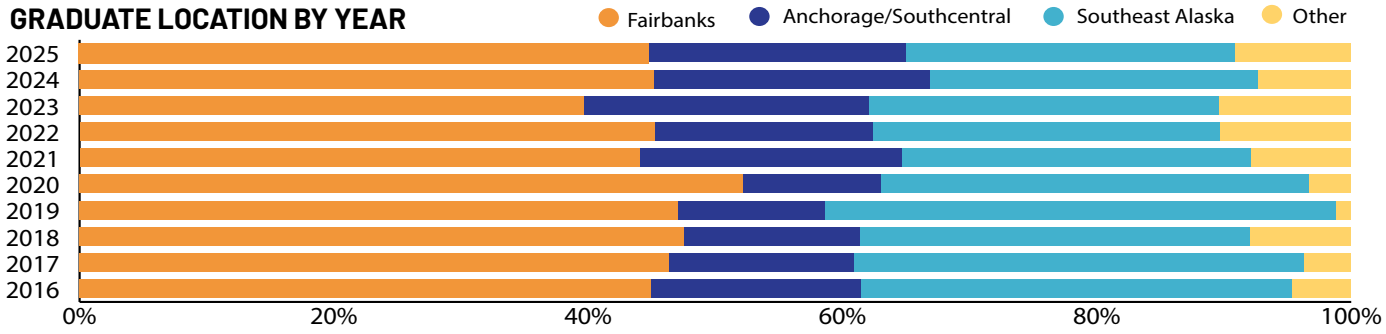

## GRADUATE ETHNICITY BY YEAR



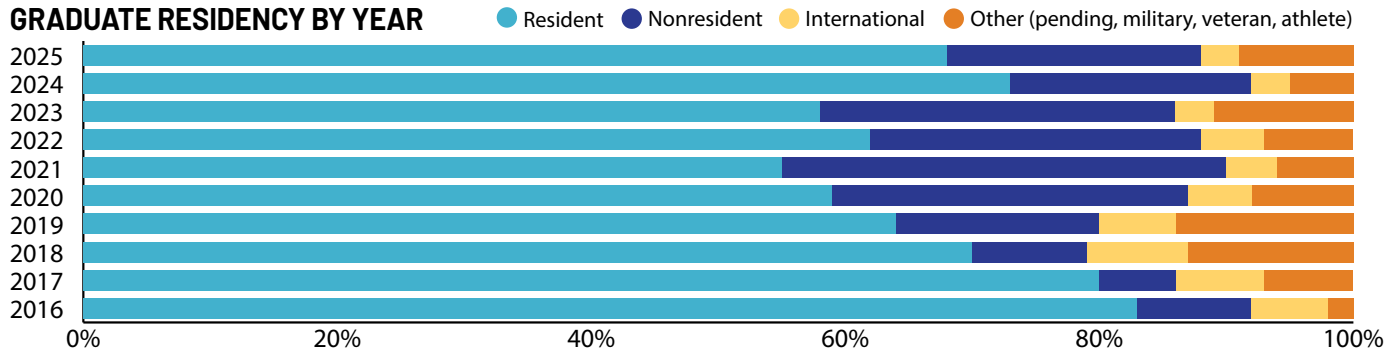

## GRADUATE GENDER BY YEAR



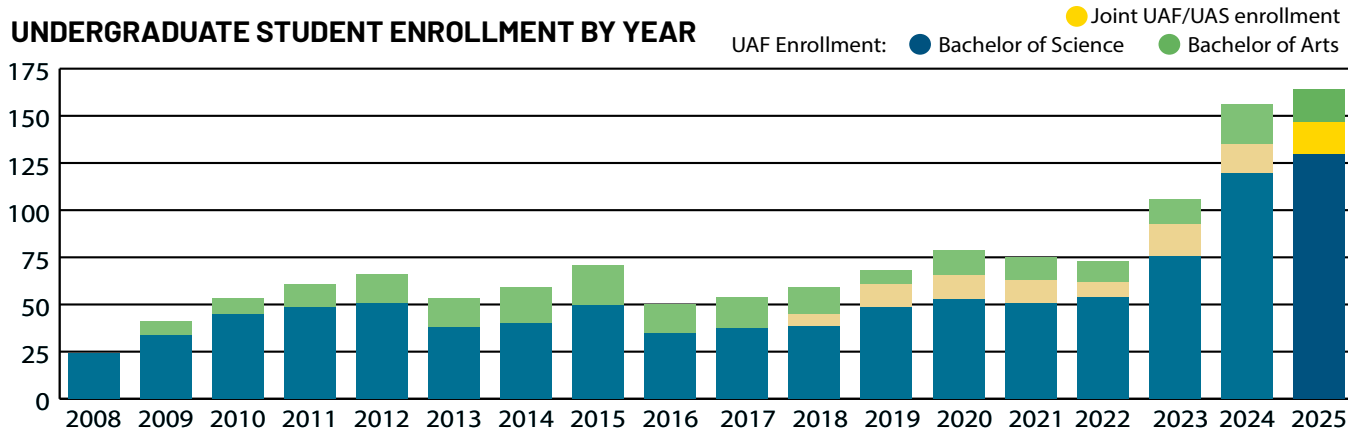

## GRADUATE LOCATION BY YEAR




## GRADUATE RESIDENCY BY YEAR



## UNDERGRADUATE STUDENT ENROLLMENT BY YEAR

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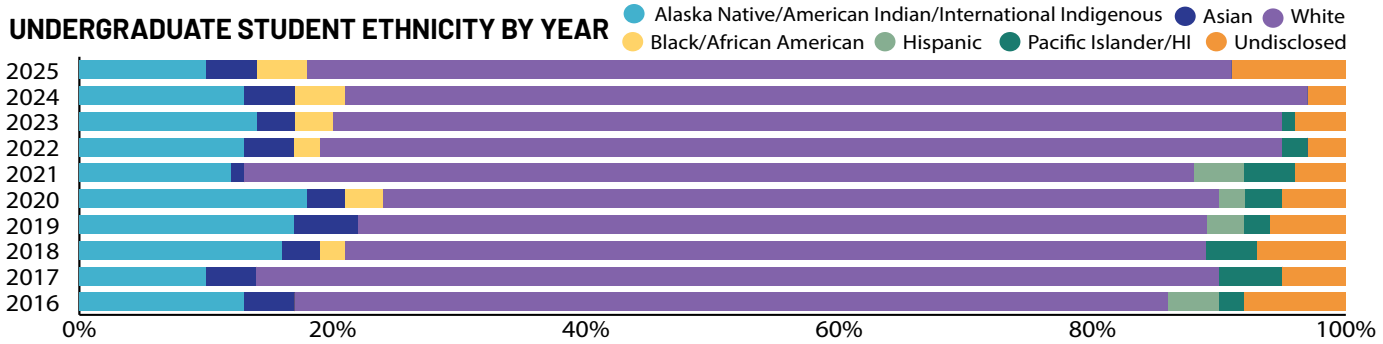
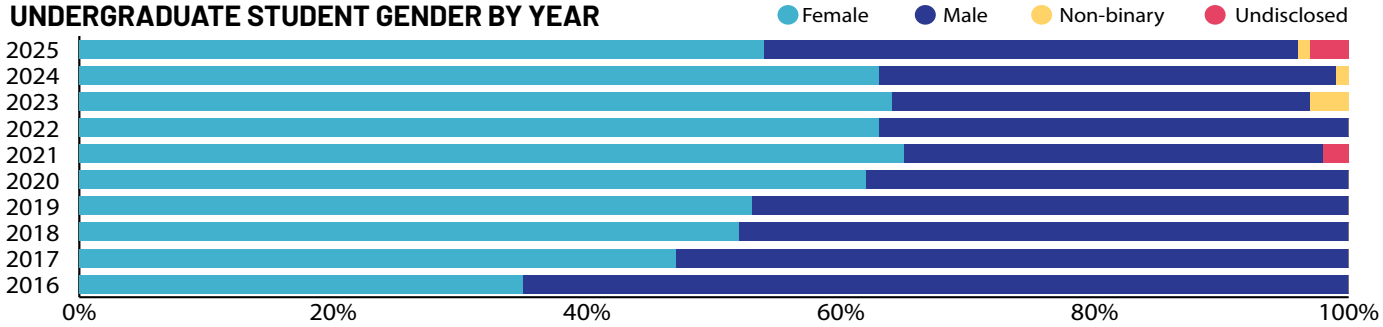
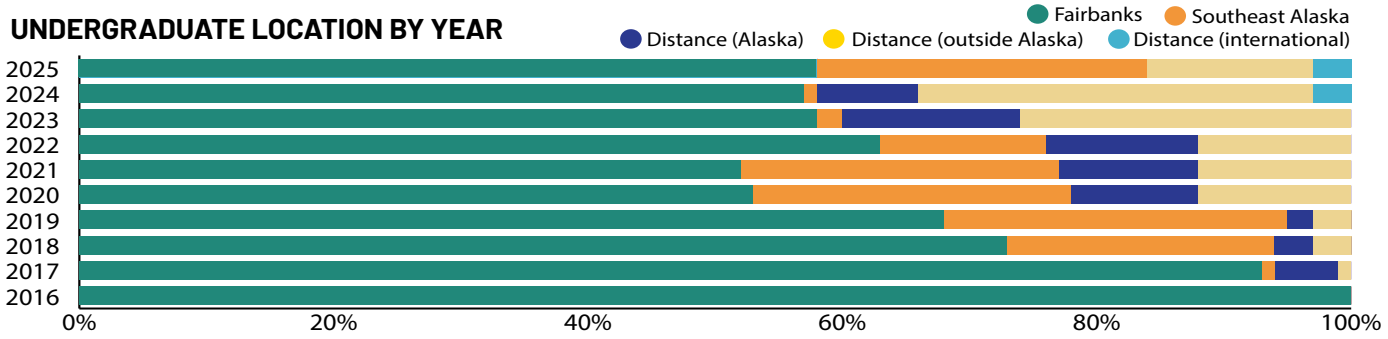


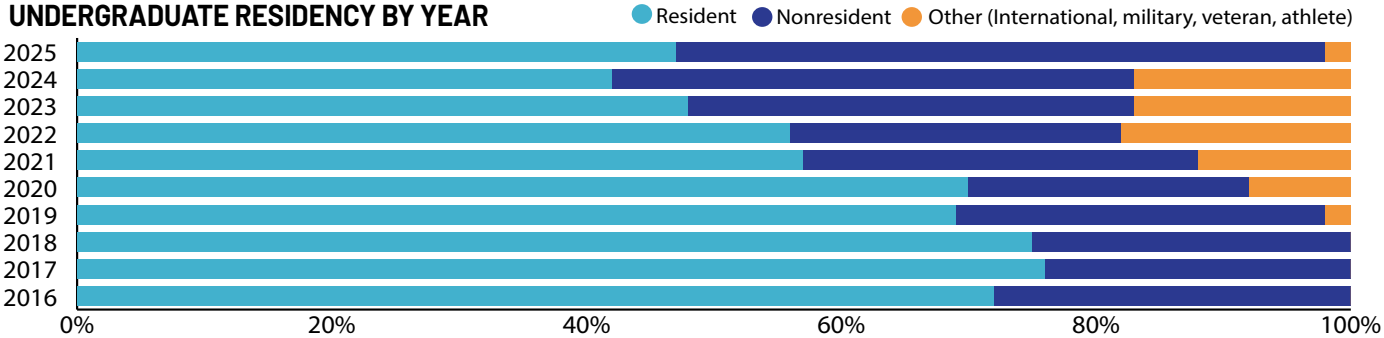

## UNDERGRADUATE STUDENT GENDER BY YEAR




## UNDERGRADUATE LOCATION BY YEAR




## UNDERGRADUATE RESIDENCY BY YEAR



# Research

## Research efforts illustrate range of CFOS science

Faculty, staff and students have engaged in a broad variety of research efforts in the past year, ranging from long-term ecosystem monitoring in the Gulf of Alaska, Bering Sea and Chukchi Sea, to focused individual studies on fisheries, marine biology and oceanography.

Several areas of interest illustrate the breadth of CFOS science. Mariculture research continues to be an area of growth for the marine biology department, focusing on both industry partnerships and ecological impacts. The UAF ocean glider lab continues to expand the range and capabilities of its fleet of autonomous underwater vehicles with novel applications in marine mammal monitoring and fisheries. Our fisheries researchers are exploring the complex challenges salmon are facing amid a shifting climate, using both long-term data sets and new observational approaches.

Our researchers are supported by a variety of national and regional sponsors, including the National Science Foundation, National Oceanic and Atmospheric Administration, Bureau of Ocean Energy Management, Alaska Ocean Observing System, North Pacific Research Board, Office of Naval Research, National Institutes of Health, Department of Energy, National Parks Service, National Aeronautics and Space Administration, Prince William Sound Science Center and Alaska Department of Fish and Game. Our largest source of private support is Alaska's commercial fisheries through the Pollock Conservation Cooperative Research Center.

**Opposite page: Graduate student Ava Meier deploys a satellite-tracked drifter from the deck of R/V *Sikuliaq*. *Photo by Seth Danielson.***

## CFOS Active Grants as of June 30, 2025

Total current research funding (awarded): **$146 million**
Total active grants: **107**

Wikimedia photo of a northern pike.

## Pike use marine corridors to colonize new territory

A CFOS-led research effort has determined that northern pike are moving through salt water to invade freshwater habitats in Southcentral Alaska. Researchers at UAF and the Alaska Department of Fish and Game made the discovery by collecting and analyzing otoliths from northern pike caught in the region. It's the first known documentation that northern pike are traveling through estuaries, where fresh water from rivers mixes with the ocean, to colonize new territory in North America. The discovery offers new insights into the ongoing spread of northern pike throughout Southcentral Alaska. Their expansion was previously believed to be limited to freshwater corridors or illegal introductions by people.

"They're a freshwater fish, and it was thought that Cook Inlet represented a marine barrier stopping them from moving from watershed to watershed," said CFOS Professor Matthew Wooller.

Wooller led the team's efforts to reconstruct the movements of pike by analyzing ear stones collected since 2019. The composition of strontium isotopes in the layers of a pike's otolith can be matched with chemical signatures in various waterways, showing where a fish traveled during its life. As efficient predators, pike impact native fish species such as salmon when they invade new territory.

The study found three pike from separate freshwater locations with isotopic signatures matching upper Cook Inlet water, suggesting they had occupied the inlet at some point.

The newfound realization that the fish are moving through estuaries "is just one more reason that northern pike are a poster child of what makes a formidable invasive species," said Peter Westley, CFOS associate professor of fisheries.

# Glider lab marks a milestone with 'Glide 365' project

A trio of CFOS autonomous underwater vehicles marked an unprecedented milestone in 2025: an entire year of nonstop oceanographic sampling in the Gulf of Alaska.

The project, called Glide 365, proved that autonomous gliders could conduct a year's worth of continuous data collection in the often-brutal conditions along the gulf's outer continental shelf. "With hourly profiles from the surface to the seafloor, we sampled right through 30- to 40-foot seas and storm-force winds," said Hank Statscewich, who runs the CFOS glider lab. The resulting dataset is a first-ever compilation of the outer shelf's seasonal hydrography.

Such high-resolution oceanographic data is important for studies of the Gulf of Alaska ecosystem, which supports some of the nation's most productive fisheries. Phytoplankton blooms support the region's food web, and information about ocean and ecosystem conditions helps the North Pacific Fishery Management Council set harvest limits.

Glide 365 gliders were deployed from R/V *Nanuq* near Seward, traveling about 100 miles to an instrumented oceanographic mooring on the outer shelf. The gliders and stationary mooring collect complementary data: The glider can gather data up to the surface as the mooring collects water samples, sediment samples and acoustic data. CFOS Professor Seth Danielson, who is leading the monitoring effort, said Glide 365 provided invaluable new data about seasonal transitions in the Gulf of Alaska. The project eventually out shot its yearlong target, with continuous monitoring from March 2024 to May 2025.

"Using gliders is really the ticket for near-real-time data delivery," Danielson said. "We get updated measurements every few hours and can use that information to guide ship sampling efforts."
The uninterrupted coverage was made possible with a team of eight UAF staff piloting three gliders, each with its own data-collecting niche.
The effort was accomplished with funding from the Alaska Ocean Observing System, vessel support from NSF's Northern Gulf of Alaska Long-Term Ecological Research program, and a federal appropriation secured by Sen. Lisa Murkowski.

Autonomous underwater vehicles are lined up outside the glider lab at the Seward Marine Center. *Photo by Hank Statscewich.*

A newly captured juvenile king salmon rests in a viewing box, which allows researchers to identify fish species and measure their size. *Photo by Johnna Elkins.*

## Tagging project looks for answers about king salmon decline

An ambitious new research project aims to better understand the lives of king salmon by focusing on their difficult journey from freshwater habitat to the ocean.

The project, a collaboration between CFOS and the Alaska Department of Fish and Game, is using hundreds of acoustic tags and an array of underwater hydrophones to track young salmon as they navigate the Kenai River to Cook Inlet. Researchers are focusing on kings in the smolt stage, a relatively understudied period of development.

"It's a time when they're going through physiological changes, and it's also a dangerous stage," said CFOS Fisheries Professor Andy Seitz, who is one of the leaders of the project. "They're changing from freshwater to saltwater fish, and there are a lot of hungry mouths in the ocean."

In the first season for the project, a research team implanted 289 Kenai River king salmon smolt with tiny devices about the size of a Tic Tac mint that emit regular pings. Each has a unique signal, allowing researchers to identify individual fish with underwater hydrophones as they make their journey down the Kenai River to Cook Inlet. The project will expand in scope as it continues for the next two summers.

The acoustic technology has never been used on juvenile salmon in Alaska, and the first summer was spent working to adapt it to the rugged Kenai River environment. CFOS students working on the tagging project include Johnna Elkins, Dakota Rygh and Danielle Tryon.

A better understanding of the survival bottlenecks facing young salmon could ultimately affect how they are managed in Alaska rivers, said Tony Eskelin, a Soldotna-based fisheries biologist who is leading the project for ADFG.

"We have a lot of excitement for this project, and a lot of data to process," he said.

The project is funded by a $4 million federal earmark through NOAA to research juvenile Chinook salmon.

## Otter behavior seems unaffected by Kachemak Bay oyster farms

From shellfish to seaweed, CFOS researchers play an important role in studying Alaska's emerging mariculture industry.

New research this year included observations of Kachemak Bay sea otters and their interactions with several oyster farms in the area. Emily Reynolds, who conducted the study as a graduate student, noted which foods they consumed and how much time they spent foraging, resting, grooming, and conducting other activities.

During hundreds of hours of observations, otters weren't seen eating any oysters, and the presence of mariculture operations didn't appear to have a notable effect on their behavior.

"Broadly speaking, we really found no significant differences," Reynolds said. "They're doing the same thing whether there's a farm there or not."

That result was unexpected, said Reynolds. Kachemak Bay has an estimated population of about 6,000 sea otters, who consume as much as a quarter of their body weight in prey each day. The growth of oyster farming in recent decades seemed to provide a rich new ecosystem for foraging.

Otters were seen eating clams, mussels and crabs around both farms and nearby control areas. Their diet didn't appear to include oysters, which aren't native to Kachemak Bay and are grown in difficult-to-access cages. The way otters spent their time was similar around oyster farms and in nearby control areas, even though the farms could be more productive areas for finding prey.

One otter behavior observed in mariculture areas may serve as both a benefit and a potential concern. Otters were seen eating mussels off ropes and buoys, which could pose a challenge to mussel cultivation but help reduce the accumulation of pests on equipment, known as biofouling.

"Biofouling is an incredible nuisance," Reynolds said. "That would be a benefit to the farm workers, because it's difficult to keep gear clean."

A sea otter forages in Jakalof Bay. *Photo by Emily Reynolds.*

## Mitigating killer whale entanglement in trawl nets

Following a spike in Bering Sea killer whale entanglements, a simple addition to fishing nets has delivered positive early results for keeping the big marine mammals out of deepwater flatfish trawls.

The net modification was developed through a collaboration between Assistant Professor of Fisheries Hannah Myers and the Alaska Seafood Cooperative, which coordinates a fleet that targets groundfish such as flounder and sole.

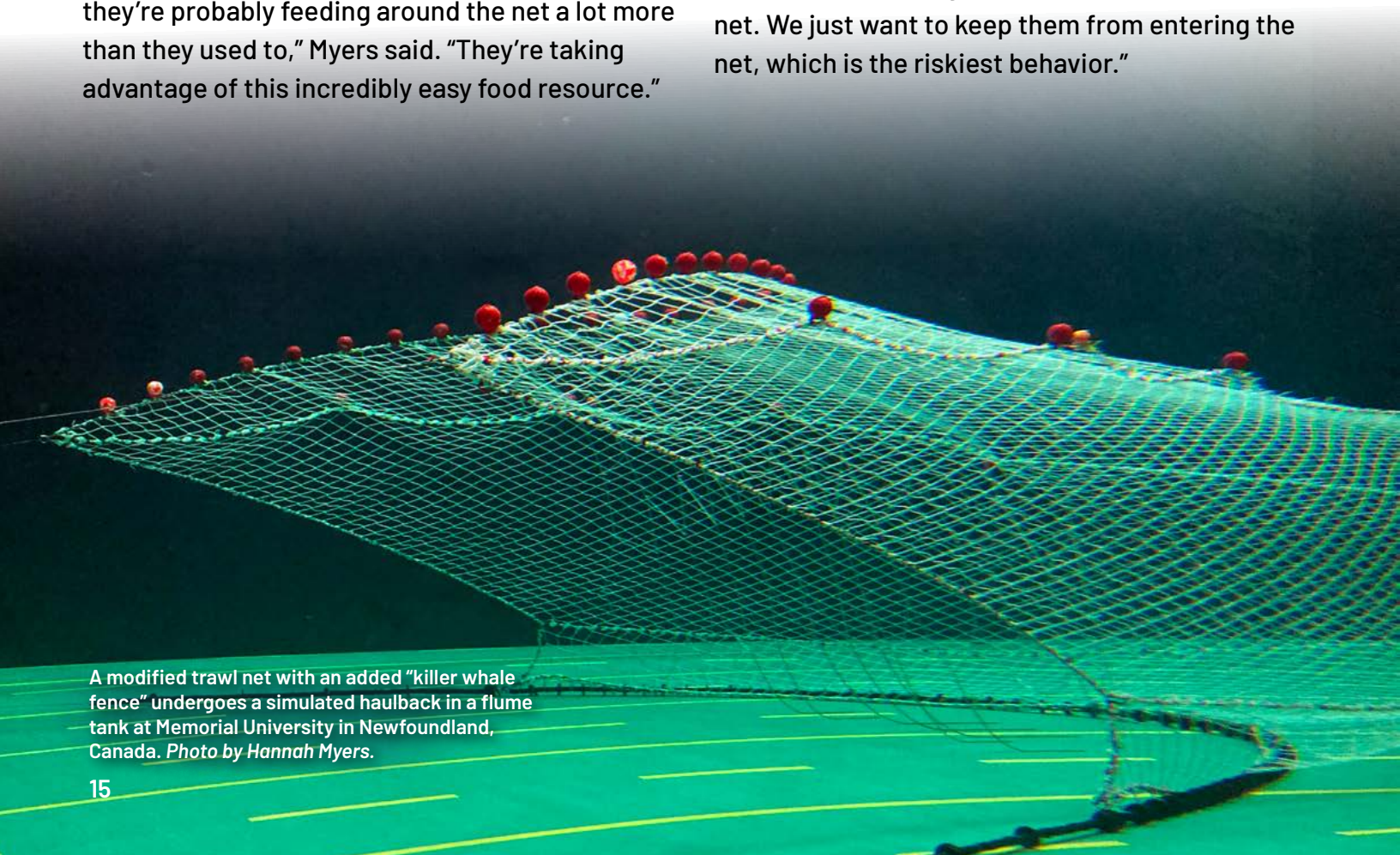
Captains working the summer fishery began noticing significantly more killer whale activity around their nets starting in about 2020. They reached out to CFOS researchers for help understanding killer whale behavior to mitigate entanglements.

"There's a huge interplay of factors that I think we'd all like to understand better, but our theory is they're probably feeding around the net a lot more than they used to," Myers said. "They're taking advantage of this incredibly easy food resource."

The fleet had a particularly rough summer in 2023, with six killer whale deaths and another serious injury. After a successful but limited trial run that summer, the modified gear was refined for both the 2024 and 2025 seasons, with the new designs tested at a massive flume tank at Memorial University in Newfoundland, Canada. Myers provided expertise in killer whale behavior and biology during the process, while industry personnel ensured the design was practical for their operations.

That partnership led to fleetwide use of the new Bering Sea deepwater flatfish trawl gear in 2024, with a single entanglement recorded during that summer season. The fleet's 2025 season recently ended without any mortalities.

"We're obviously encouraged by what we see so far," Myers said. "We think it's working because we're not eliminating access to food around the net. We just want to keep them from entering the net, which is the riskiest behavior."



A modified trawl net with an added "killer whale fence" undergoes a simulated haulback in a flume tank at Memorial University in Newfoundland, Canada. *Photo by Hannah Myers.*

A herd of walrus rests in the northern Bering Sea. *Photo by Natalie Cross.*

## Microplastics contaminate marine mammal diets in remote waters

Searching for microplastics in Alaska's marine mammals has become a surprisingly fruitful area of study for Marine Biology Professor Lara Horstmann and her students. They've analyzed stomach contents, muscle tissues, even placentas and amniotic fluid.

"We found it everywhere," Horstmann said.

Those discoveries have underscored a grim reality: Even in some of the most remote regions on Earth, microplastic pollution is abundant. One of Horstmann's former students, Alexandria Sletten, first explored the topic while working on her graduate project in 2021. Subsistence hunters wondered whether their foods contained microplastics, leading to an analysis of seal stomachs that had been collected by the Alaska Department of Fish and Game.

That project spiraled into a growing interest for Horstmann and her students. Three undergraduates and three graduate students are currently working on microplastics projects, including studies on bowhead whales, belugas, northern fur seals, polar bears, and walruses. An analysis of hard shell clams is up next.

"As you are answering one question, others pop up, and that's pretty much what happened here as well," Horstmann said.

Sletten recently published her research about the stomach contents of spotted seals harvested by subsistence hunters in the Bering and Chukchi seas. Of the 34 seal stomachs that were examined, only one was free of microplastics.

Horstmann has been careful to keep the research in perspective for people who eat subsistence foods. An analysis of steaks, pork chops and chicken breasts from a Fairbanks grocery store found microplastics in that meat as well, although the types and sources were different from the wild foods.

"The concentrations were very similar to those we found in marine mammals," she said.

# R/V *Sikuliaq*

In its ninth year of operation, the research vessel *Sikuliaq* supported 14 science cruises led by researchers from UAF and several other institutions, traveling 36,970 nautical miles through the Pacific and Arctic oceans. UAF faculty, staff and students were involved in 35% of *Sikuliaq's* science days at sea. *Sikuliaq* and its crew started FY2025 by supporting a project to study how microbes in deep subsurface marine sediments in the Gulf of Alaska have adapted to persist in an environment that is severely limited by energy availability. The year concluded with work on a multidecadal project, the "Seward Line," for the Northern Gulf of Alaska Long-Term Ecological Research project. In between, the ship traveled from the Beaufort and Chukchi seas to the Pacific Northwest to the far reaches of the tropical Pacific Ocean, providing a safe and effective platform for a variety of research projects.


R/V *Sikuliaq* in Resurrection Bay, near Seward. *Photo by Sarah Spanos.*

## 2025 *Sikuliaq* Statistics

36,970 nautical miles traveled • 302 paid ship days • 209 days at sea • 48 days in the Arctic (as defined by the Arctic Research and Policy Act of 1984) • 4 days in the ice • 290 conductivity/temperature/depth casts • 25 trace metal CTD casts • 18 expendable bathythermograph casts • 226 net tows • 48 moorings deployed • 43 moorings recovered • 8 ROV dives • 12 gliders deployed • 10 gliders recovered • 104 corings collected • 28 buoys/floats deployed • 13 buoys/floats recovered • 3 towed cameras • 179 bottom samples collected • 1 sediment trap deployed • 8 magnetometers deployed • 6 seismic streamers deployed • 13 seismic air guns deployed

## *Sikuliaq* operating agreement extended through 2028

The U.S. National Science Foundation has funded the first year of a new $53.8 million, four-year cooperative agreement with the University of Alaska Fairbanks to continue operating the research vessel *Sikuliaq* through the end of calendar year 2028.

The global-class, ice-capable research vessel, which is owned by NSF, has been operated by CFOS since it was constructed in 2014. UAF management of the ship covers staffing, cruise scheduling, procurement of supplies and fuel, and operating the Seward Marine Center, where the vessel is homeported. Its operations support 39 permanent full-time employees and 25–30 temporary crew members.

Following a rigorous review process, NSF renewed the cooperative agreement directly with UAF rather than competing the ship nationally with other potential operators. The new agreement took effect in early 2025.

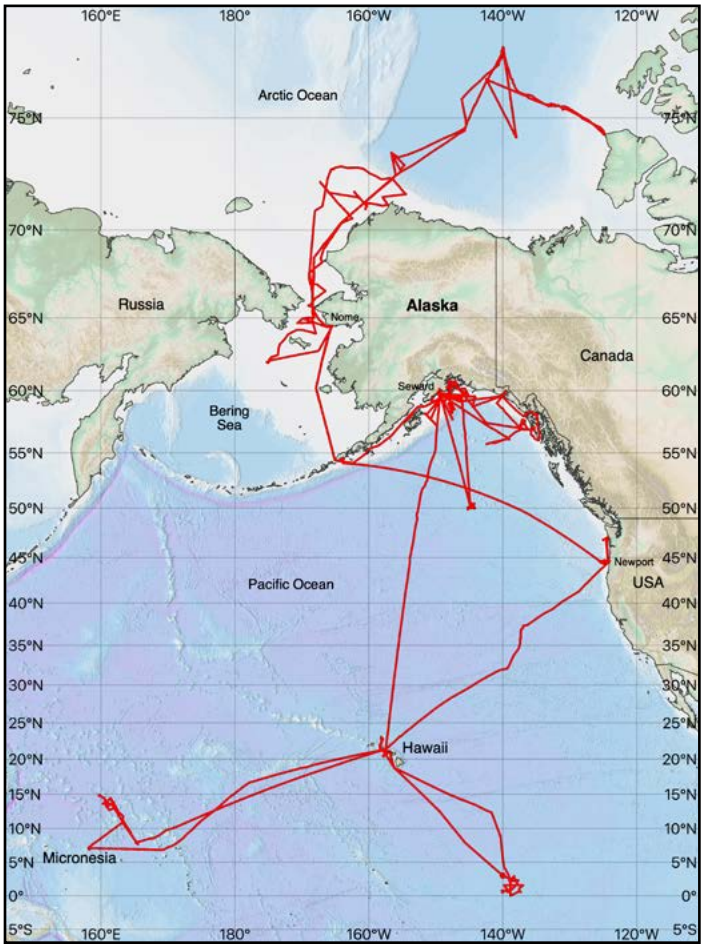
*Sikuliaq* is designed to operate in harsh conditions to advance polar and subpolar scientific research. The 261-foot ship is the only ice-capable vessel in the U.S. Academic Research Fleet.

Those capabilities have attracted a diverse array of research projects during the past decade. Users and research partners have included more than 100 academic institutions, federal agencies and Alaska Native organizations. Notably, UAF faculty, staff and students have participated in about half of the ship's science days at sea over the past decade.

In recent years, the vessel has been an essential part of a long-term oceanographic monitoring program in the Gulf of Alaska, hosted a project that revealed mysteries about the Bering Land Bridge, and supported research in the South Pacific while local vessels were busy or undergoing repairs.

UAF strives to ensure that research activities aboard the ship do not interfere with Alaska Native communities and subsistence hunters. *Sikuliaq* is the first and only vessel in the academic research fleet with procedures outlining when and how scientists are expected to work together with Alaska coastal communities.

"We are grateful to be entrusted by NSF to continue as operator of this important research facility that meets national science needs," said Dean Bradley Moran.




R/V *Sikuliaq* ship track from July 1, 2024, through June 30, 2025. *Image provided by Doug Baird.*

# Research Centers, Institutes and Facilities

## Lena Point Fisheries Facility

The Lena Point Fisheries Facility, which also hosts the NOAA Ted Stevens Marine Research Institute, houses about half of the Department of Fisheries faculty and a third of its graduate students. It also hosts the Department of Marine Biology's Mariculture Lab and is the home port for R/V *Ishkeen,* which supported mariculture projects and surveys of the region's humpback whale population this year.

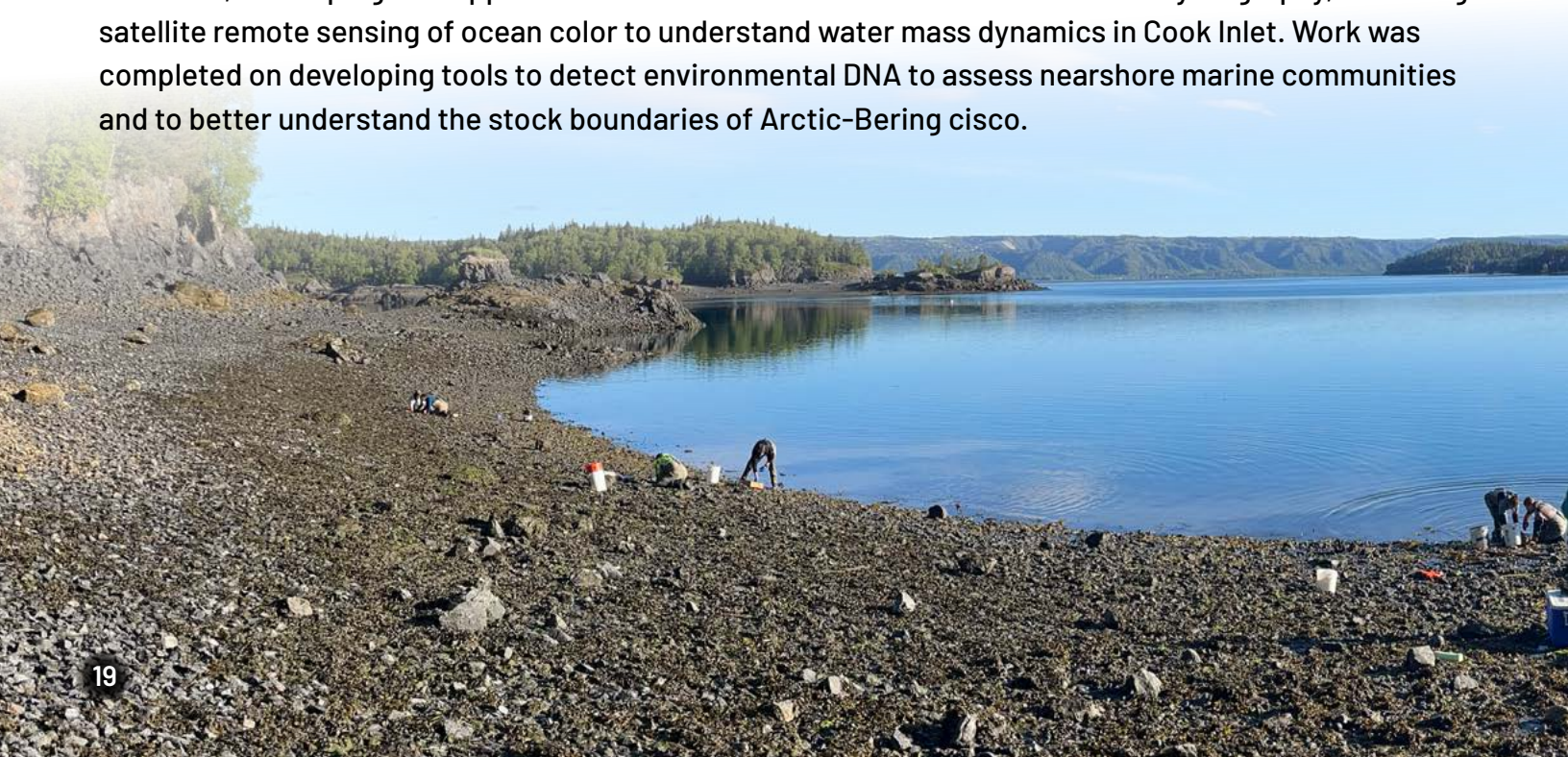
Modern classrooms and laboratories support in-person and online classes and research projects. These include studies of nearshore plankton dynamics, sea otter ecology, seaweed and abalone culture, wild-hatchery fish interactions, marine mammal reproduction, and advanced computational tools for fisheries assessment and management. Many projects are conducted in collaboration with state and federal researchers in Juneau, leveraging funding, equipment and expertise.

This year the Mariculture Lab increased its abalone capacity and is housing thousands of animals that will be deployed to farm sites in Southeast Alaska. The lab also hosted numerous visitors, including the Native Conservancy, Nike, Southeast Conference, Nature Conservancy, M.J. Murdock Charitable Trust, ocean farmers from around Alaska, and students and representatives from the Aquaculture Semester at the University of Alaska Southeast.

## Coastal Marine Institute

The Coastal Marine Institute is a cooperative program between the federal Bureau of Ocean Energy Management and the University of Alaska, with participation by the Alaska Department of Fish and Game. CMI operates as a competitive scientific research program emphasizing topics associated with natural resource development in Alaska's outer continental shelf.

While no new projects were funded in 2025, several continued or were completed. Continuing projects included study of the impacts of ice on tidal circulation and transport of suspended materials in coastal estuaries, developing new approaches to characterize subsurface currents and hydrography, and using satellite remote sensing of ocean color to understand water mass dynamics in Cook Inlet. Work was completed on developing tools to detect environmental DNA to assess nearshore marine communities and to better understand the stock boundaries of Arctic-Bering cisco.



## Rasmuson Fisheries Research Center

The mission of the Rasmuson Fisheries Research Center is to promote excellence in research and to develop fisheries scientists. The center supported five CFOS graduate students this year, who are studying Alaska-grown Pacific oysters, northern fur seals, equity in fisheries management, seabirds of the Pribilof Islands, and microplastic concentrations in subsistence foods.

## Seward Marine Center

The Seward Marine Center proudly serves as the home port for two state-of-the-art research vessels, *Sikuliaq* and *Nanuq*. In the past year, research activities aboard R/V *Nanuq* included comprehensive plankton studies, bird surveys, fisheries assessments, tidal dynamics studies and the deployment and recovery of underwater gliders. SMC provided critical support to R/V *Sikuliaq* during a challenging field season that involved projects ranging from the Beaufort Sea to the tropical Pacific.

The seawater system in the D.W. Hood Laboratory supported vital programs such as the Northern Gulf of Alaska Long-Term Ecological Research Initiative, glider projects, and modular power generation. A section of the wet lab continues as a dedicated glider-servicing facility.

The SMC Mooring Loft continues to play a crucial role in building and repairing anchored systems for a growing network of ocean observatories. The K.M. Rae Marine Education Building served as a classroom for the CFOS Subarctic Oceanography Field Course.

## Pollock Conservation Cooperative Research Center

The Pollock Conservation Cooperative Research Center supports research projects and graduate student fellowships focusing on pollock biology and resource utilization, fisheries management and incidental catch, habitat and ecosystems, and protected species. In 2025, PCCRC supported three new research projects and nine ongoing ones. PCCRC anticipates supporting $300,000 in new research projects in 2026.

Students and researchers harvest samples on a beach in Kasitsna Bay. *Photo by Hannah Gerrish.*

## Kasitsna Bay Laboratory

The Kasitsna Bay Laboratory, located in Kachemak Bay in the southcentral Gulf of Alaska, provides a unique facility for coastal research, teaching and outreach. It is operated as a partnership between CFOS and NOAA's National Centers for Coastal Ocean Science.

The lab was the summer home for several graduate students working on long-term research projects. They included studying the effects of oyster mariculture on the seafloor system, biofouling on oyster cages, the population dynamics of hardshell clams, and how temperature microhabitats influence mussel habitat. Students also participated in the CFOS scientific diving classes and the marine biology and ecology field course.

Researchers from across the nation once again visited the lab to study a wide array of topics. The lab was also a favored location for school and outreach groups from across Alaska, providing students from grade school to college level an opportunity to explore the rich and diverse ecosystem around the lab.

## Ocean Acidification Research Center

The Ocean Acidification Research Center monitors the marine carbonate system in Alaska's large marine ecosystems, with goals of detecting ocean acidification and providing information for fishery managers and decision makers. In 2025, OARC began a new ocean education project. 4-H pH is funded by the NOAA Ocean Acidification Program, and fills a request from communities and schools for place-based and active science education programs. The project is executed through the UAF Cooperative Extension 4-H program in Sitka, led by Jasmine Shaw, with curriculum development by Christina Buffington, a science educator at the UAF Geophysical Institute. Youth in Sitka spent five months monitoring local marine water while learning about what pH means in the ocean and in the kitchen. Youth in Angoon and Petersburg also participated with 4-H pH during summer camps.

Students head back to the Kasitsna Bay Laboratory after a day of collecting samples. *Photo by Quillian Anderson.*

# Development

The enduring success of the Alaska Tsunami Bowl, Alaska's regional competition for the National Ocean Sciences Bowl, relies on donor support. CFOS is profoundly grateful to Dolly Dieter for her decades of generous support for the annual event.

Dieter's sustained philanthropy has helped to provide hundreds of high school students with the opportunity to immerse themselves in complex ocean and marine science topics. Her visionary, long-term commitment directly supports the logistics, materials, and student travel necessary to host the competition, fostering the next generation of marine scientists, policymakers and stewards. Dieter's support ensures this vital academic tradition continues to thrive, shaping ocean literacy across Alaska and connecting our local student talent to the national stage.

## Major Donors

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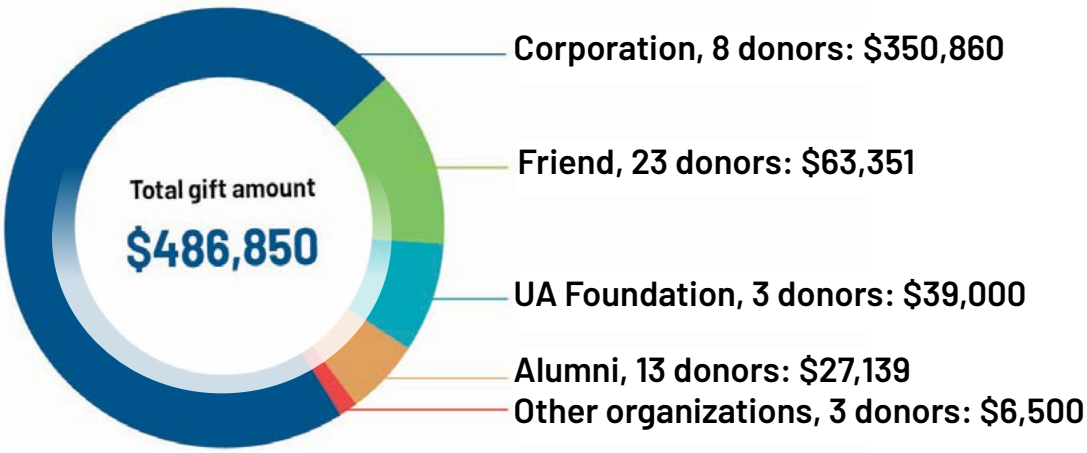
Frankie Wakefield*
Wards Cove Packing Company
Anonymous donor

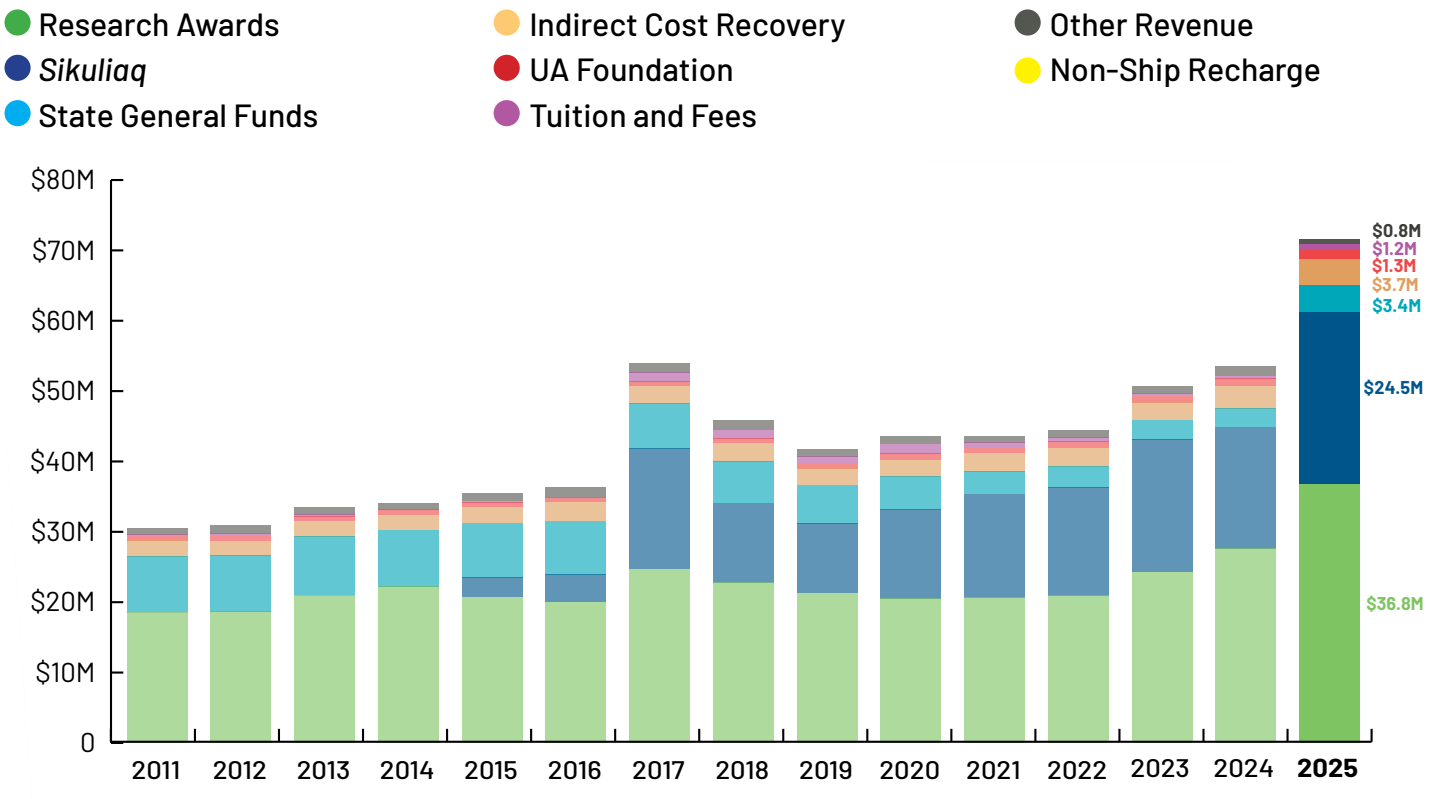
**deceased*

## FY25 Fundraising Totals



# Budget and Finance

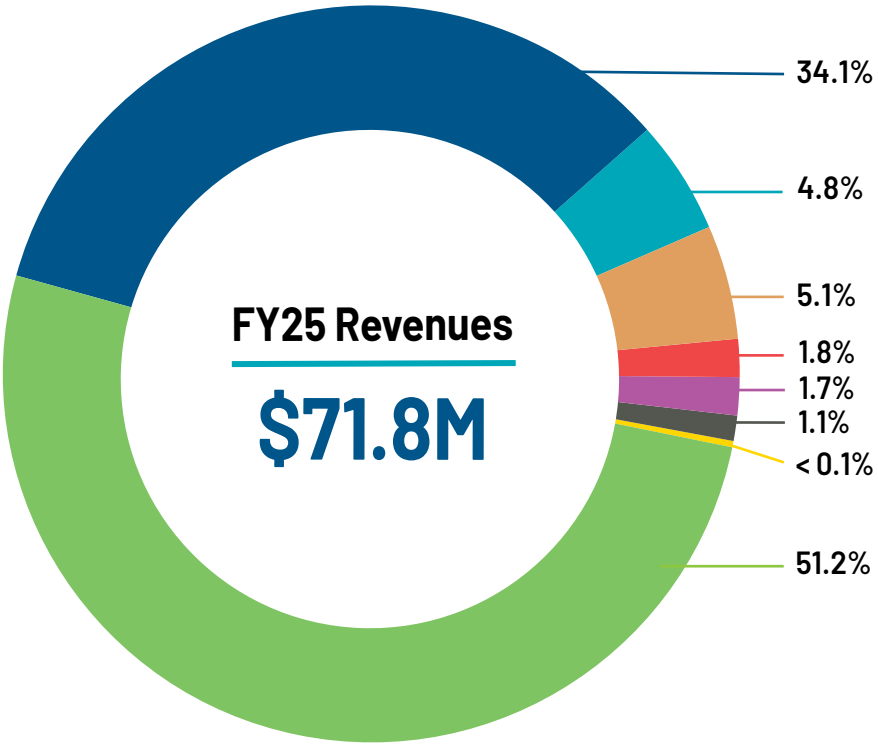
## FY25 CFOS Revenue Trend




*R/V Sikuliaq construction funds (American Reinvestment and Recovery Act, $200M, 2011–2016) excluded.*

A view of Resurrection Bay from the Seward Marine Center. *Photo by Steve Dykstra.*

- Research Awards ($36.8M)
- *Sikuliaq* ($24.5M)
- State General Funds ($3.4M)
- Indirect Cost Recovery ($3.7M)
- UA Foundation ($1.3M)
- Tuition and Fees ($1.2M)
- Other Revenue ($0.8M)
- Non-ship Recharge ($0.1M)



## College of Fisheries and Ocean Sciences

University of Alaska Fairbanks
2150 Koyukuk Drive
245 O'Neill Building
Fairbanks, AK 99775-7220

Ph: (907) 474-7210
Fax: (907) 474-7204
Email: uaf-pio-cfos-team@alaska.edu

UAF
COLLEGE OF FISHERIES AND OCEAN SCIENCES
University of Alaska Fairbanks

Front and back cover: Fur seals bask in the warmth of a summer day on Lovushki Island in the Kuril Islands, a volcanic archipelago administered as part of Sakhalin Oblast in the Russian Far East. *Photo by Russel Andrews.*