Did You Know

Building Alaska's Blue Economy

UAF College of Fisheries and Ocean Sciences
UAS College of Arts and Sciences
UAS Fisheries Technology Program
Alaska Sea Grant

June 3, 2021
University of Alaska Board of Regents

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Did You Know

Interview with
Dr. Bradley Moran, Dean CFOS
and
Dr. Robert Foy, NOAA

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COLLEGE OF FISHERIES AND OCEAN SCIENCES

University of Alaska Fairbanks

Dr. Bradley Moran, Dean

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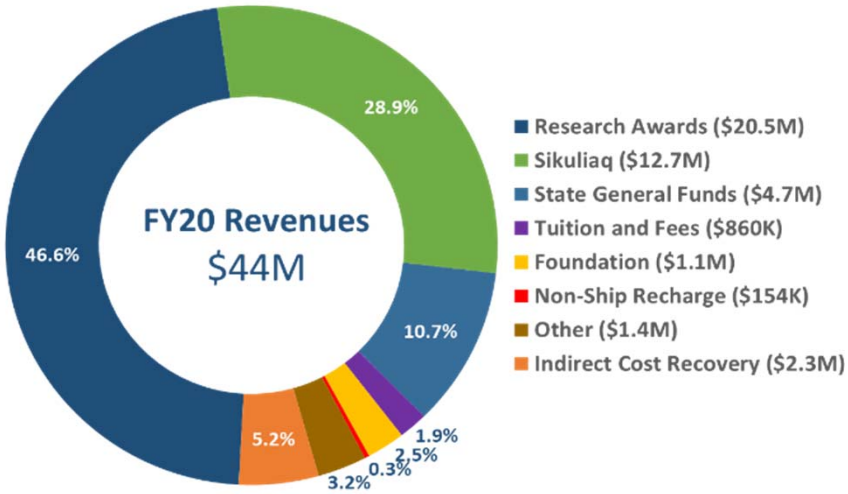
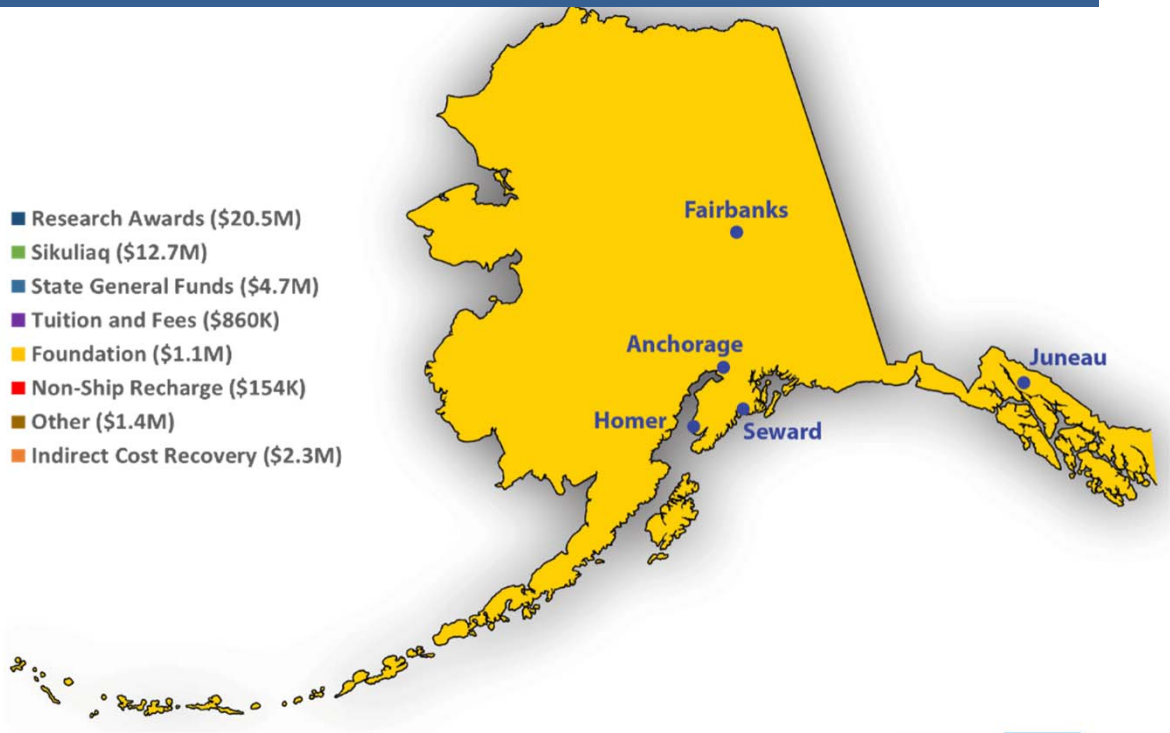
CFOS Overview

CFOS is the largest combined research and academic unit in Alaska with over 300 faculty, staff and students working at 5 locations across Alaska





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Diversity and Inclusion

2020 Demographics

Student Type	Women	BIPOC	International
BS/BA	67.7%	37.1%	1.6%
MS thesis	67.3%	20.4%	2.0%
PhD	61.0%	39.0%	12.2%

Faculty Type	Women	BIPOC	International
Tenure Track	51.7%	3.4%	3.4%
Research	42.9%	14.3%	14.3%

BIPOC: Black, Indigenous, People of Color

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Tamamta

NRT: NNA: Tamamta (All of Us): Transforming Western & Indigenous Fisheries & Marine Sciences Together

PIs: Courtney Carothers, Jessica Black, Charlene Stern, & Peter Westley

Fellows & Activities

1st Cohort: 9 Fellows
Yup'ik, Inupiaq, Tsimshian, Sugpiaq, Unangax̂, Dena'ina, & Ojibwe; Aug 2021

Elders in Residence

Dialogues

New Courses

Cultural Immersions

Indigenous Approach

- 14,000+ yrs of stewardship
- Persistent inequities
- Transformative approach

Graduate student Elizabeth Mik'aq Lindley (Yup'ik), Kuskokwim River, 2017

Research & Partners

ISM

EPSCoR

SASAP State of Alaska's Salmon and People

Orutsararmiut Native Council

Kuskokwim River

First Alaskans Institute

NOAA Fisheries

Yukon River

Tanana Chiefs Conference

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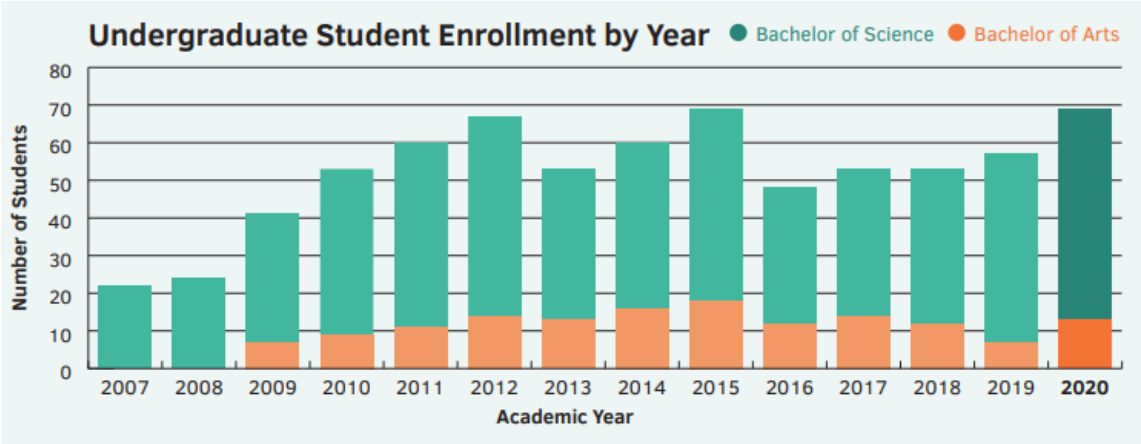
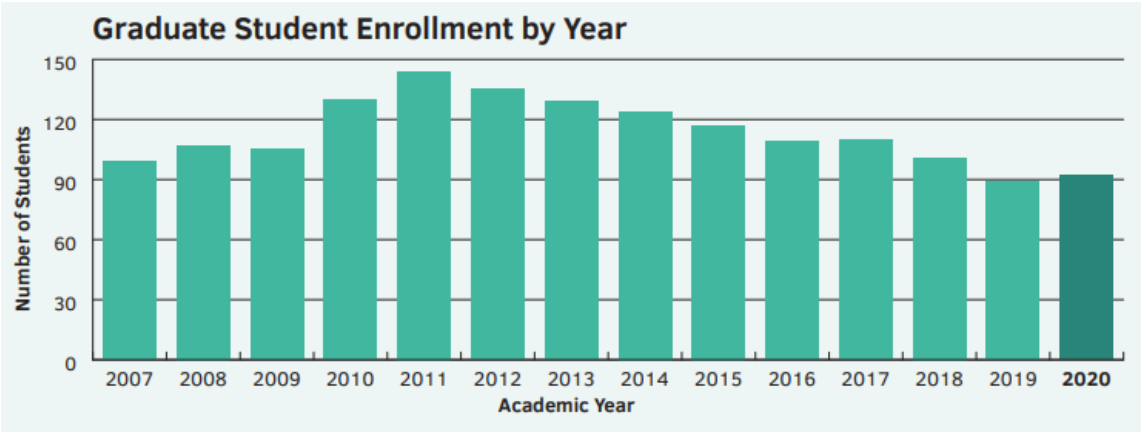
Student Enrollment





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Student Experience

Fisheries and Ocean Sciences Student Association (FOSSA)

Goals

- Improve the student experience through advocacy and representation
- Promote equity, inclusivity, diversity and community building across campuses and colleges

Leadership

Past Chair:

Katie McCabe

Present Co-Chairs:

Courtney Hart & Lindsey Stadler

Officers:

Stephanie O'Daly,

Katia Berghaus

Emily Ortega

Liza Hasan

Department Reps:

Delaney Coleman (O)

Hannah Meyers (MB)

Olivia Edwards (F)

Emily Williamson (UG)

Academic Programs

UAF CFOS programs

- B.S. in Fisheries and Marine Sciences (4 concentrations)
- B.A. in Fisheries (2 concentrations)
- Minors – Fisheries, Marine Sciences
- M.S. and Ph.D. in Fisheries, Marine Biology, and Oceanography
- Master of Marine Studies (M.M.S.): non-thesis, on-line
- STEM (Blue) MBA: with School of Management

Joint UAF-UAS programs

- Masters of Marine Policy (M.M.P.): joint with CFOS & UAS (in development)
- UAS-UAF Joint Program in Fisheries (B.S. in Fisheries Sci.; UAS)

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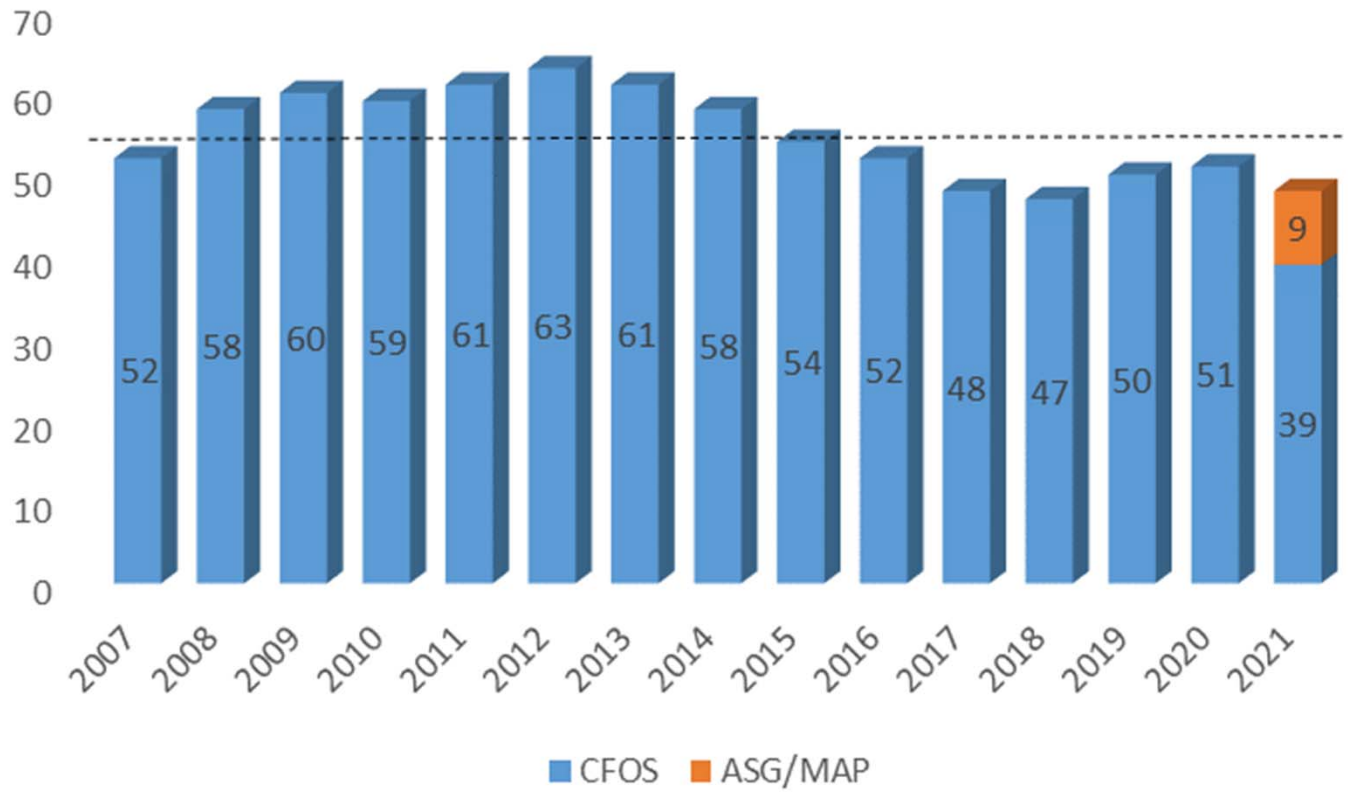
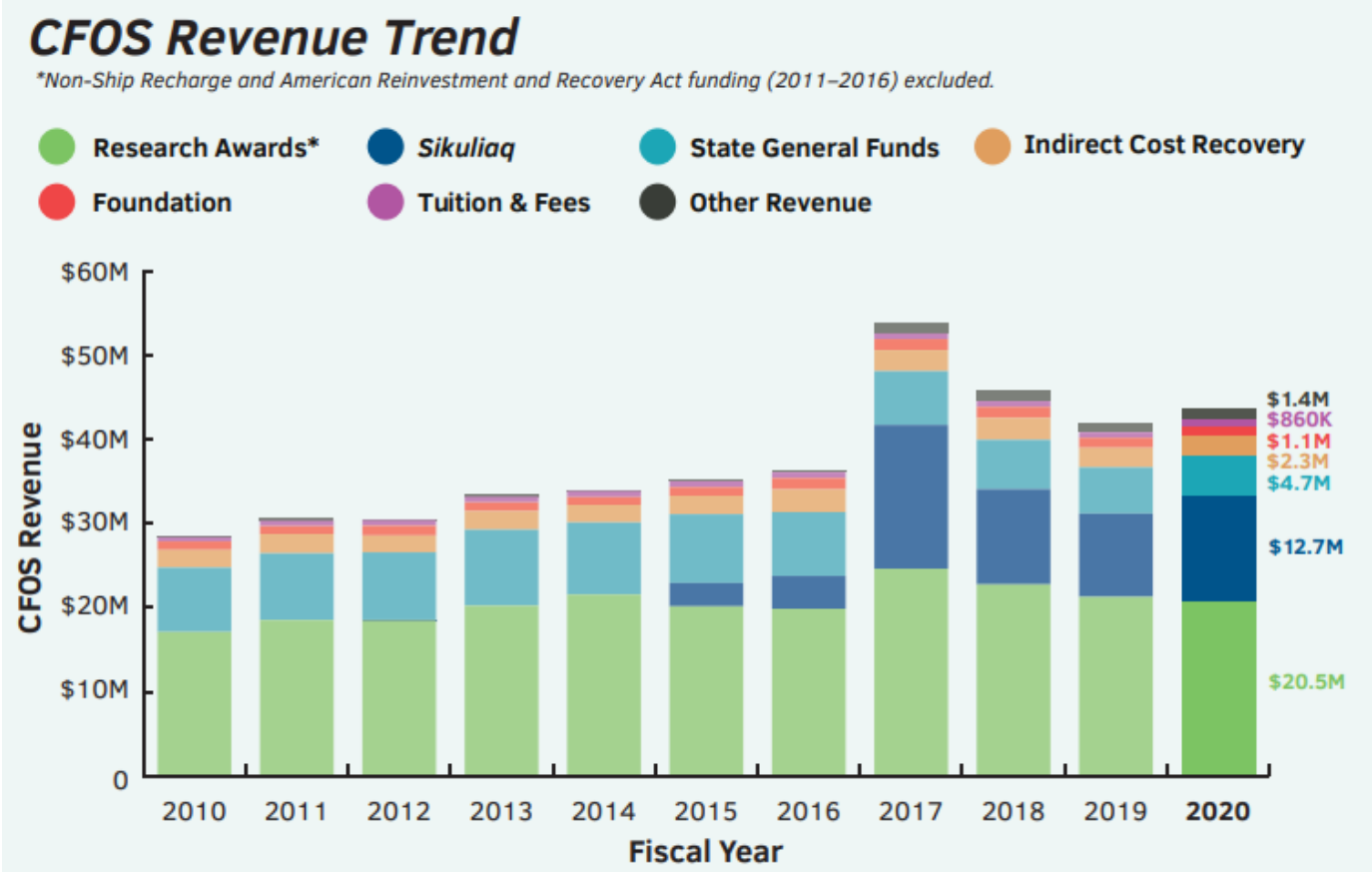
CFOS Faculty



CFOS Revenue Trend



Research & Economic Drivers

Research Centers, Institute and Facilities

- Alaska Blue Economy Center
- Coastal Marine Institute
- Institute of Marine Science
- Kasitsna Bay Laboratory
- Lena Point Fisheries Facility
- Ocean Acidification Research Center
- Pollock Conservation Cooperative Research Center
- Rasmuson Fisheries Research Center
- R/V *Sikuliaq,* R/V *Nanuq,* & Seward Marine Center

Major Programs

- NSF EPSCoR Fire and Ice Project
- NSF Long-term Ecological Research programs
- Arctic Shelf Growth, Advection, Respiration and Deposition Program
- Arctic Integrated Ecosystem Survey
- Arctic Marine Biodiversity Observing Network
- Gulf Watch Alaska

CFOS Active Grants as of June 30, 2020

- Total active grants: **189**
- Total awarded research funding: **$182 million**

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Seward Marine Center

- R/V *Sikuliaq* and R/V *Nanuq* homeport
- Primary docking facility for academic research vessels working in Alaska
- Supports a growing network of ocean observatories in California, Oregon, the Gulf of Alaska, the Bering Sea, Alaska's Arctic, and Antarctica
- Since 1998, host to regional high school "Tsunami Bowl" science competition, part of the National Ocean Sciences Bowl
- Planning and design underway for pier and warehouse replacement (NSF)

FY20 *Sikuliaq* Statistics

- NM traveled: **20,900**
- Paid ship days: **192**
- Science days: **153**
- UAF/CFOS PI days: **72**
- Revenue: **$12.7 million**

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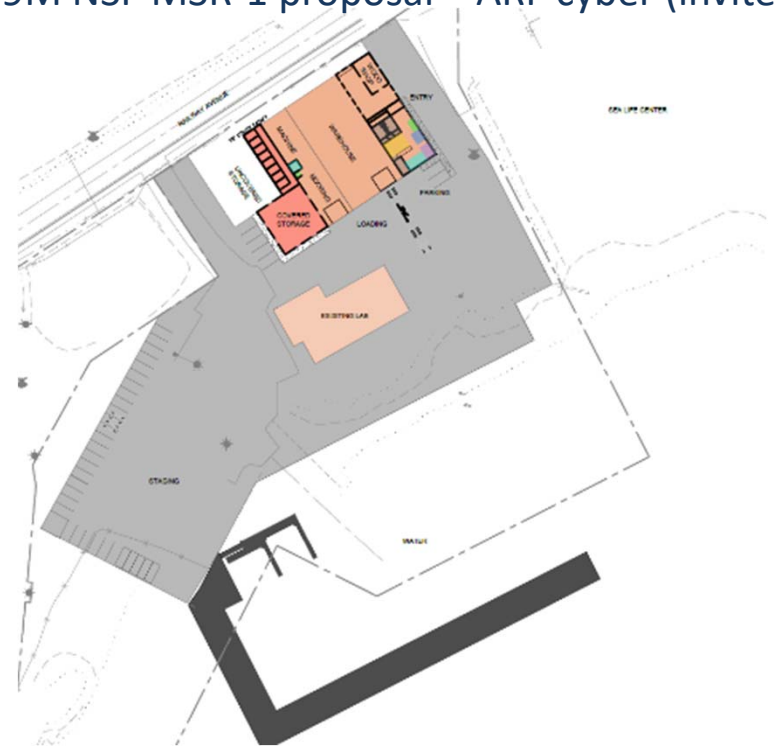
Seward Marine Center

$79M NSF MSR-2 pre-proposal – pier replacement
$19M NSF MSR-1 proposal – ARF cyber (invited)



Science at Sea During Pandemic

- In spite of the COVID-19 pandemic, CFOS faculty and students were able to conduct essential research by following stringent preparation and safety plans

- *Sikuliaq* was the first vessel in the US Academic Research Fleet permitted to engage in research amidst COVID-19 pandemic

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Fisheries and Ocean Science in SE Alaska

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Dr. Karen Carey, Chancellor and Dr. Joel Markis, Assistant Professor

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UAS Academic Programs

UAS programs

- B.S. in Marine Biology
- A.A.S. in Applied Fisheries
- A.A.S. in Marine Transportation
- Certificates and Occupational Endorsements:
  - Fisheries Management
  - Alaskan Aquaculture
  - Scientific Diving

BA/BS Joint UAF-UAS programs

- Masters of Marine Policy (M.M.P.)
- B.S. in Fisheries Sci.; UAS & UAF

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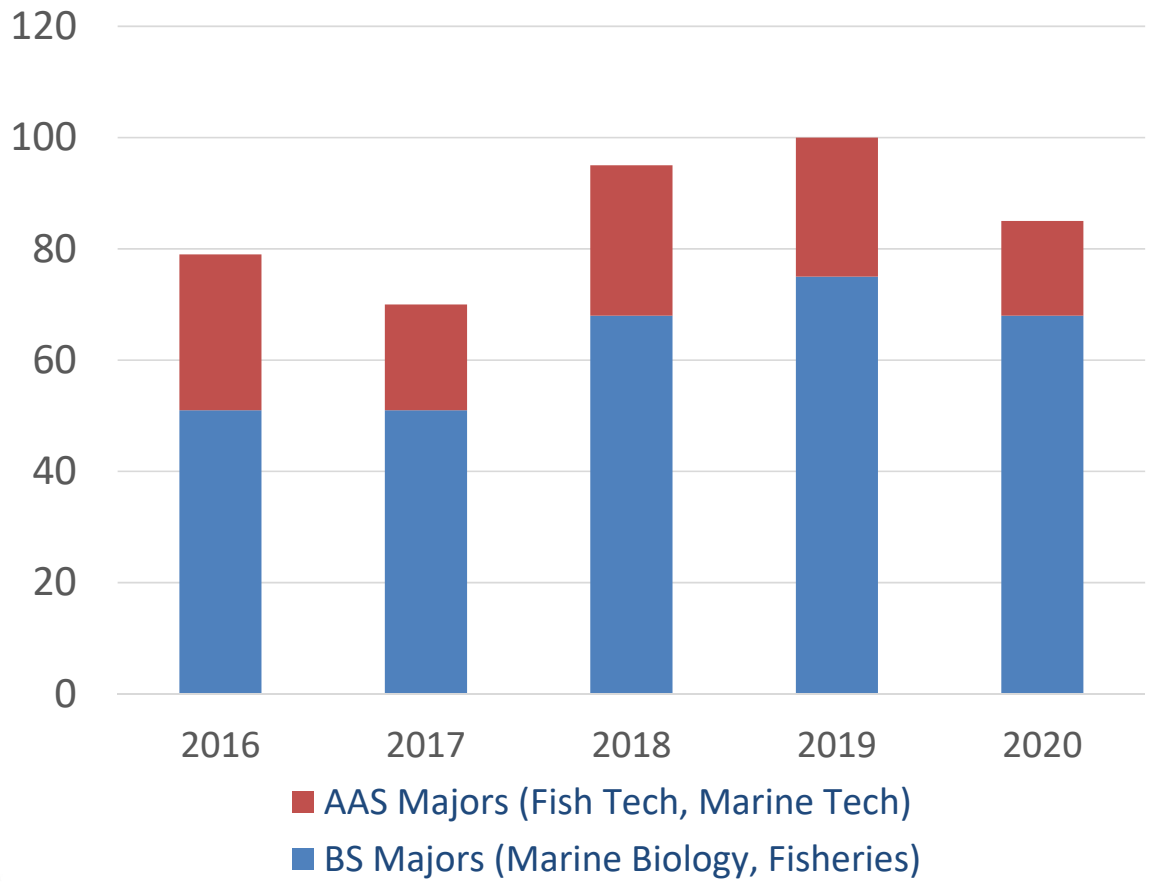
UAS Program Majors



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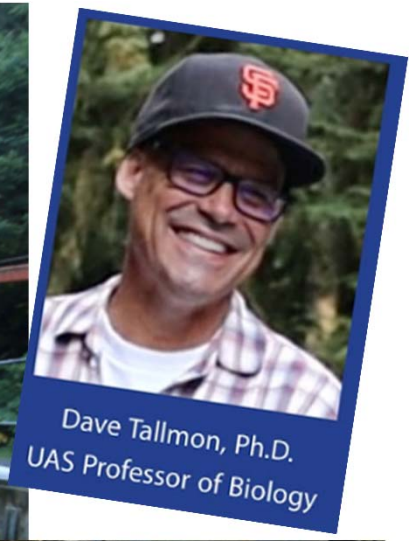
Research Programs



Auke Creek Fish Weir:

Long-term, high quality data on salmon populations.

UAS, NOAA, UAF partners

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Research Programs

Dr. Jason Fellman
Alaska Coastal Rainforest Center

Dr. Eran Hood
Environmental Sciences

Glacier Meltwater to Marine Food Webs:
Ancient organic matter feeds today's marine life.

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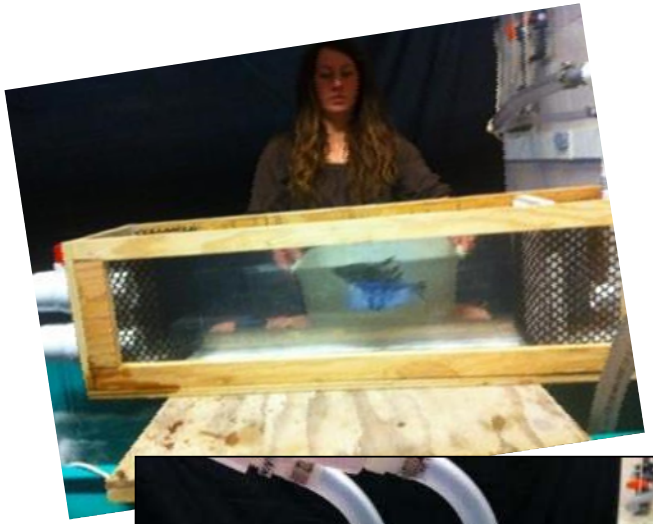
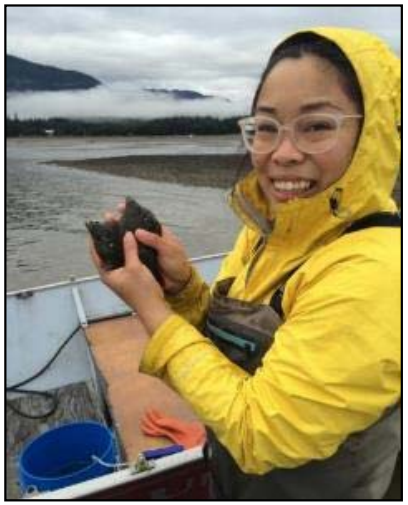
Research Programs



Dr. Carolyn Bergstrom
Biology



Starry Flounder
EcoPhysiology

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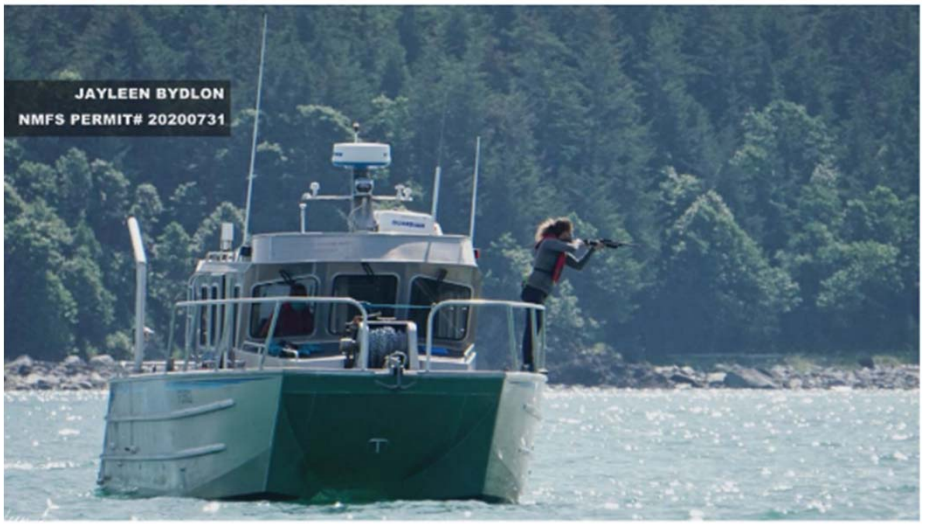
Research Programs

Researchers study Juneau's whales without cruise ship passenger interactions



Researchers collect blubber samples from humpback whales near Juneau, Alaska. (Jayleen Bydlon | NOAA Fisheries)

Joint project with UAS, UAF, NOAA Fisheries

Dr. Heidi Pearson
Marine Biology

Marine mammal behavior and conservation

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Fisheries Technology Program

- Applied Fisheries Education
- One & Two Year Degrees
- Workforce Development
  - Fisheries Management
  - Aquaculture / Mariculture
  - Scientific Diving

Joel Markis
Fisheries
Technology

Fisheries Technology

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Industry Driven

- Coursework and curricula developed with industry input
- Keep abreast of industry needs
- Industry based internships
- Industry on Advisory Committee
- Industry Supported Scholarships

Fisheries Technology

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Degree Offerings

- Associates of Applied Sciences (A.A.S.) – Applied Fisheries (60cr)
- Certificate – Applied Fisheries (33cr)
  - Alaskan Aquaculture Emphasis
  - Fisheries Management Emphasis
- Occupational Endorsement (O.E.) (13cr)
  - Alaskan Aquaculture O.E.
  - Fisheries Management O.E.
  - Scientific Diving O.E.

Fisheries Technology

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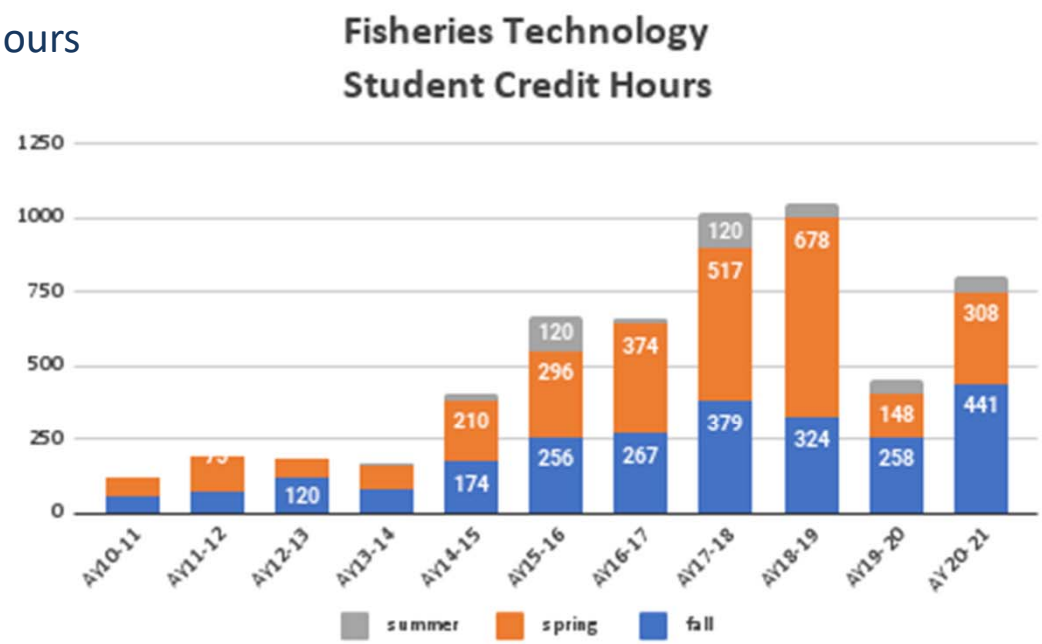
Program Success

- ~10 fold increase in Student Credit Hours
- Reach ~ 300 students per year
- Teach ~ 900 Student Credit Hours
- 35% Dual Enrollment



Fisheries Technology

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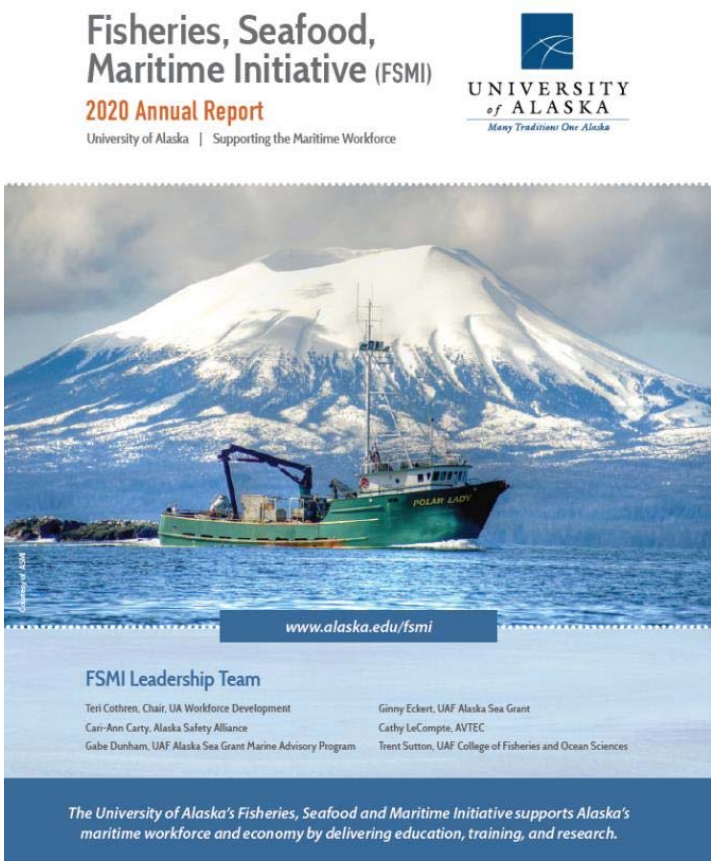
Fisheries, Seafood & Maritime Initiative



https://www.alaska.edu/fsmi/

Research Enhancement and Management

- Enhance student success, improve coordination, and maintain alignment between the joint fisheries program
- Streamline the articulation pathway between the fish tech and fisheries programs
- Further incorporate aquaculture and mariculture into the fisheries programs

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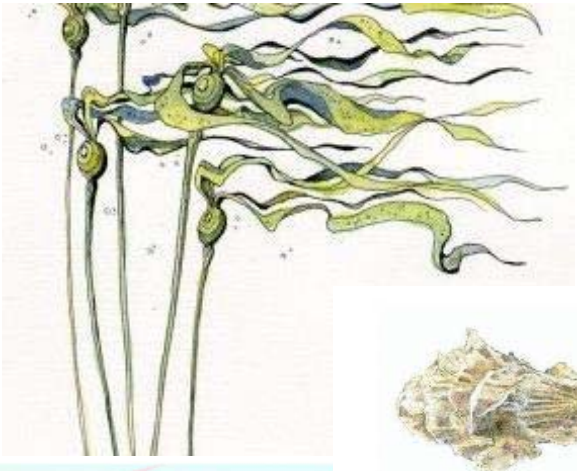
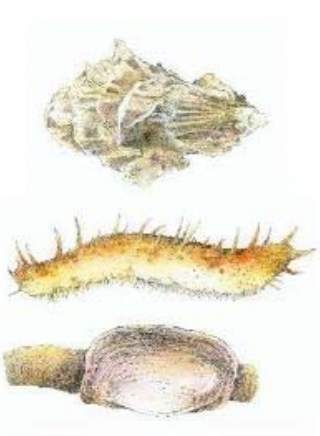
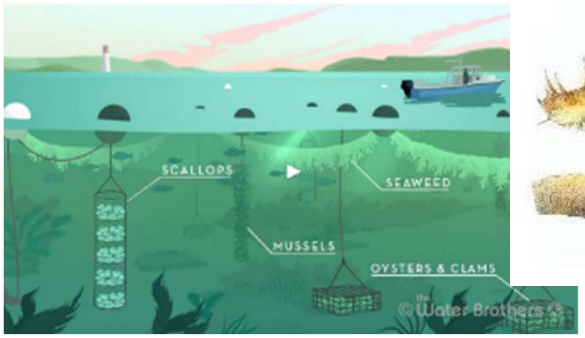
Mariculture

- Mariculture – Branch of Aquaculture
  - Cultivation of marine organisms for food
  - Shellfish & Kelp, NOT Salmon or other finfish
- Emerging Industry / Fishery with lots of excitement
- Multi-faceted w/ lots of University involvement
  - Research, Outreach, Workforce Training







Fisheries Technology

CFOS

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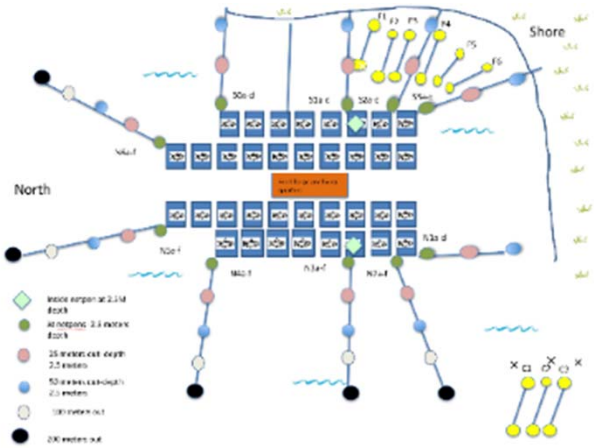
Mariculture Workforce Training

- Research on Integrated Mariculture to support industry
- Development of Mariculture Curricula
  - Occupational Endorsement (OE) in Mariculture
- Current Operation of Research / Teaching Farm
- Transition teaching farm into working farm



Fisheries Technology

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Sea Grant
Alaska

Dr. Ginny Eckert, Director Alaska Sea Grant

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Alaska Young Fishermen's Summit

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COVID-19 Rapid Response for the Fishing Fleet

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Alaska Seafood School

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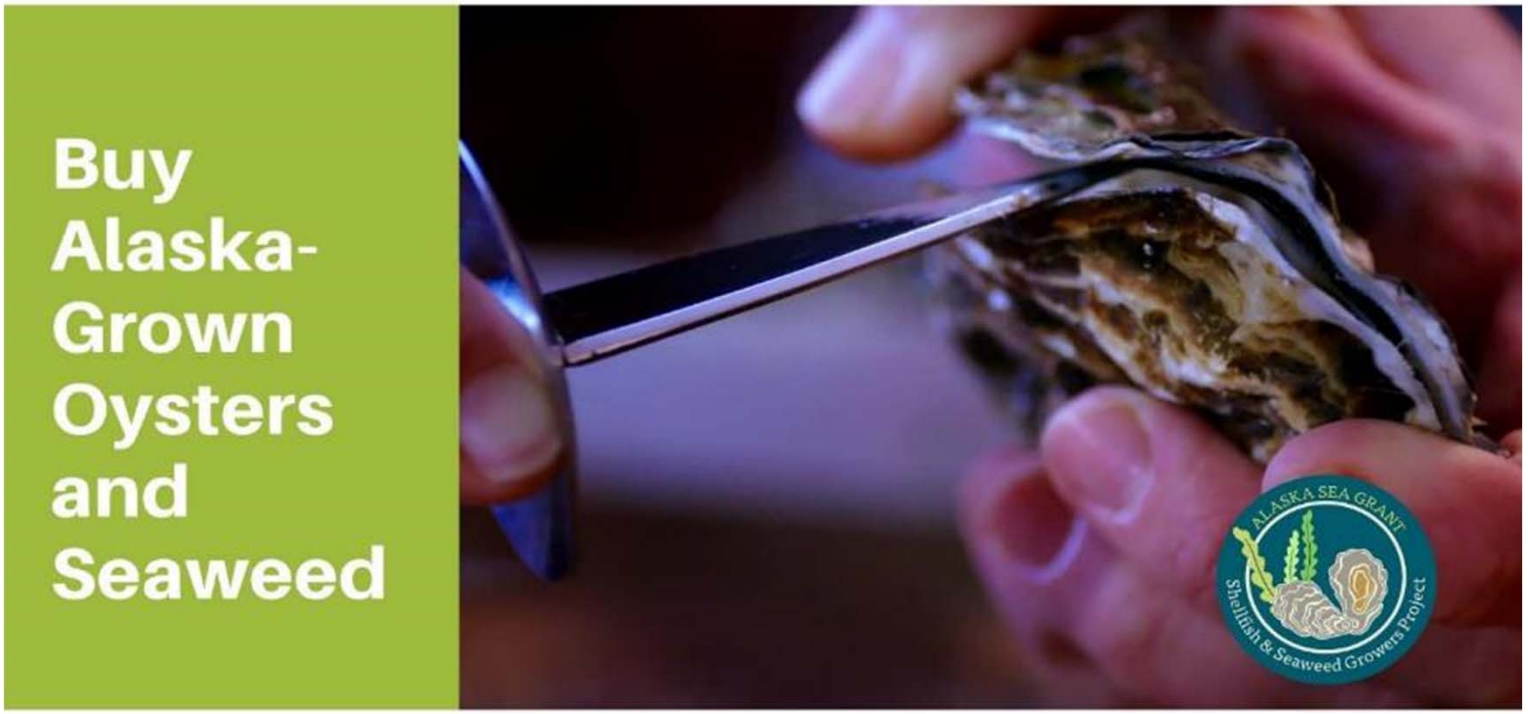
Mariculture Economic Development



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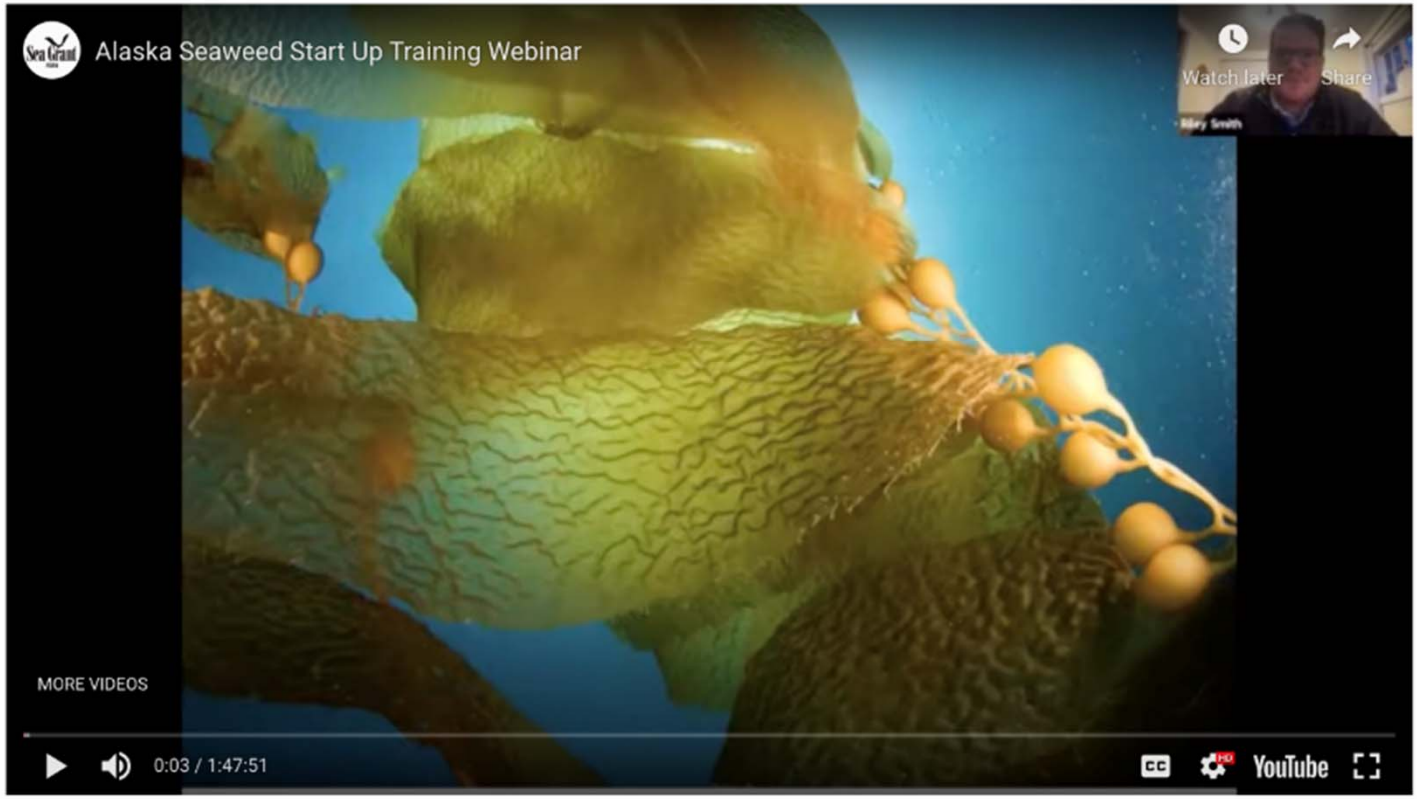
Mariculture Training

Seaweed Farm Start-up Training Program

February 2, 4:00 pm–6:00 pm AKST Free



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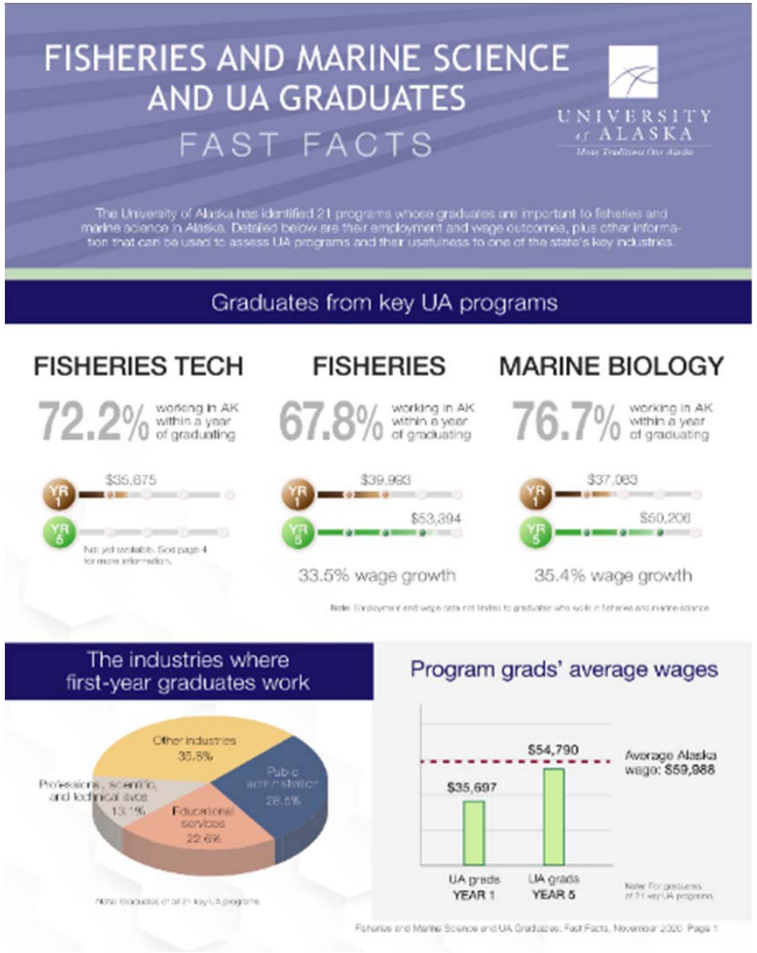
Workforce Development



UA Fisheries & Marine Science Grad Highlights

- How many programs serve this industry? **21**
- How many graduates in the past 10 years have these programs produced? **975**
- Do these programs boost the Alaska hire rate?
  - **94.1% of working grads are Alaska residents**
  - **Residency is 66.3% for all fisheries and marine science workers**
- What are the grads average five-year wages? **$54,790**

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