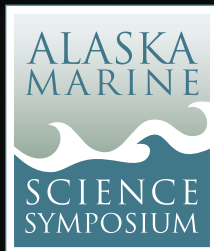


Alaska Marine Science Symposium

JANUARY 23-27, 2017
HOTEL CAPTAIN COOK & EGAN CENTER
ANCHORAGE, ALASKA



**SHOWCASING MARINE RESEARCH IN THE ARCTIC OCEAN,
BERING SEA, AND GULF OF ALASKA**

Schedule

All workshops listed are open to the public.

	MONDAY, JANUARY 23	TUESDAY, JANUARY 24
<p>Morning Plenary Session 8:00 a.m. – 11:30 a.m.</p>	<p>Workshop, 8:00 a.m. – 12:00 p.m. Communicating Ocean Sciences <i>Fore Deck, Discovery Ballroom</i></p> <p>Workshop, 10:00 a.m. – 12:00 p.m. Metadata for Models <i>Club Room 1</i></p> <p>Registration Opens, 10:00 a.m.</p>	<p>Continental Breakfast, 7:30 a.m. – 8:00 a.m.</p> <p>Registration Opens, 8:00 a.m.</p> <p>Gulf of Alaska Plenary</p> <p>Coffee Break, 9:30 a.m. – 10:00 a.m.</p>
<p>Lunch 11:30 a.m. – 1:00 p.m.</p>	<p>Lunch on your own</p>	<p>Lunch provided</p> <p>Workshop, 11:30 a.m. – 1:00 p.m. 500 Women Scientists Meet Up <i>Resolution Room</i></p>
<p>Afternoon Plenary Session 1:00 p.m. – 5:00 p.m.</p>	<p>Symposium Begins</p> <p>Opening Remarks, 1:00 p.m. – 1:30 p.m.</p> <p>Keynote, 1:30 p.m. – 2:15 p.m. Dr. Takashi Kikuchi</p> <p>Keynotes, 2:15 p.m. – 3:00 p.m. Hon. Fran Ulmer Macy Kenworthy Cade Terada</p> <p>Coffee Break, 3:00 p.m. – 3:30 p.m.</p> <p>Keynote, 3:30 p.m. – 4:15 p.m. Dr. Nicholas Pyenson</p> <p>Keynote, 4:15 p.m. – 5:00 p.m. Dr. Nicholas Bond</p>	<p>Gulf of Alaska Plenary</p> <p>Coffee Break, 2:15 p.m. – 3:00 p.m.</p> <p>Workshop, 5:30 p.m. – 7:30 p.m. Ocean Science Educators Night <i>Quadrant Room</i></p>
<p>Evening 5:00 p.m. – 9:00 p.m.</p>	<p>Exhibits and Poster Reception, 6:00 p.m. – 8:30 p.m.</p> <p>Gulf of Alaska and Bering Sea/Aleutians</p> <ul style="list-style-type: none"> • Wave 1 – 6:00 p.m. – 7:15 p.m. • Wave 2 – 7:15 p.m. – 8:30 p.m. <p><i>Egan Center, Explorers Hall, Appetizers & No-Host Bar</i></p>	<p>Exhibits and Poster Reception, 6:00 p.m. – 8:30 p.m.</p> <p>Bering Sea/Aleutians and Arctic</p> <ul style="list-style-type: none"> • Wave 1 – 6:00 p.m. – 7:15 p.m. • Wave 2 – 7:15 p.m. – 8:30 p.m. <p><i>Egan Center, Explorers Hall, Appetizers & No-Host Bar</i></p>

Posters/Exhibits & Receptions

Egan Center
555 W. 5th Ave.
Shuttle service between Egan Center and Hotel Captain Cook
provided at 15 minute intervals, 5:45 p.m. – 8:45 p.m.

All Other Events

Hotel Captain Cook
939 W. 5th Ave.
Keynotes, Plenaries, and provided lunches in Discovery Ballroom

WEDNESDAY, JANUARY 25	THURSDAY, JANUARY 26	FRIDAY, JANUARY 27
<p>Continental Breakfast, 7:30 a.m. – 8:00 a.m.</p> <p>Registration Opens, 8:00 a.m.</p> <p>Bering Sea and Aleutian Islands Plenary</p> <p>Coffee Break, 9:30 a.m. – 10:00 a.m.</p>	<p>Continental Breakfast, 7:30 a.m. – 8:00 a.m.</p> <p>Registration Opens, 8:00 a.m.</p> <p>Arctic Plenary</p> <p>Coffee Break, 9:30 a.m. – 10:00 a.m.</p>	<p>Workshop, 8:00 a.m. – 12:00 p.m. The AK Marine Mammal Stranding Network <i>Quadrant Room</i></p> <p>Workshop, 8:00 a.m. – 11:00 a.m. Introduction to Metadata <i>Resolution Room</i></p> <p>Workshop, 9:00 a.m. – 12:00 p.m. Arctic IERP and Collaboration Opportunities <i>Aft Deck</i></p>
<p>Lunch on your own</p>	<p>Lunch provided</p>	<p>Workshop, 11:00 a.m. – 5:15 p.m. Coastal Marine Institute Review <i>Quarterdeck</i></p> <p>Workshop, 1:00 p.m. – 5:00 p.m. The US-Canada Transboundary Fish and Lower Trophic Survey <i>Aft Deck</i></p> <p>Workshop, 1:00p.m. – 5:00 p.m. Cook Inlet Beluga Management, Research, and Partnership Opportunities <i>Quadrant Deck</i></p>
<p>Bering Sea and Aleutian Islands Plenary</p> <p>Coffee Break, 2:30 p.m. – 3:00 p.m.</p> <p>Student Poster Presentation Award Announcements, 4:45 p.m. – 5:00 p.m.</p>	<p>Arctic Plenary</p> <p>Coffee Break, 2:30 p.m. – 3:00 p.m.</p> <p>Student Oral Presentation Award Announcements and Closing Remarks, 4:45 p.m. – 5:00 p.m.</p>	<p>MONDAY - FRIDAY VIEWING, 9:00 a.m. – 5:00 p.m. AOOS Film Contest Entries <i>Endeavor Room</i></p>
<p>Workshop, 5:00 p.m. – 8:00 p.m. Optimizing Ocean Observing: An Instrumentation Workshop <i>Whitby Room</i></p>	<p>Workshop, 7:00 p.m. – 9:00 p.m. Arctic Research Planning Night <i>Quarter Deck</i></p>	

Lactation Station
Monday – Friday
Hotel Captain Cook
Library

Media Room
Monday – Thursday
Hotel Captain Cook
Easter Island Room

Keynote Speakers

Monday, January 23

1:30 p.m. – 2:15 p.m.

DR. TAKASHI KIKUCHI, JAPAN AGENCY FOR MARINE-EARTH SCIENCE
AND TECHNOLOGY

Changes of Oceanographic Conditions in the Pacific Sector of the Arctic Ocean and the Impact to Marine Ecosystems



The Arctic Ocean has experienced unexpected environmental changes due to global warming and rapid sea-ice reduction. Recent observations revealed significant warming, freshening and ocean acidification, especially in the Pacific sector of the Arctic Ocean. However, there are still significant knowledge gaps on Arctic Ocean environmental changes. Monitoring of oceanographic conditions and better understanding of the impacts on marine ecosystems are necessary to continue. In collaboration with research institutions and universities in the United States and other Arctic countries, Japanese researchers have been investigating environmental changes in the Arctic Ocean since the early 1990s.

The Pacific Arctic Group (PAG) is one of the most important scientific frameworks to conduct observational research with a Pacific perspective on Arctic science. With the strong collaboration among PAG partners, we have been conducting ship-based observations using the RV *Mirai* and long-term monitoring with a mooring observation system in the Chukchi and Beaufort seas. The results of this international collaboration research in the Chukchi and Beaufort seas will be introduced, as well as recent research topics on changes in oceanographic conditions and their impacts on marine ecosystems.

Takashi Kikuchi is the Deputy Director of JAMSTEC's Institute of Arctic Climate and Environment Research and Team Leader of its Arctic Ocean Climate System Research. He has participated as a researcher or lead scientist on research cruises to the Arctic for nearly 20 years. He is currently the chair of the Pacific Arctic Group, and has been an Executive Committee member of the International Arctic Buoy Program since 2008, as well as an International Science Steering Group Member for the Arctic-Subarctic Ocean Flux Program since 2010.

Kikuchi is the author of numerous scientific papers and is a contributing author to the Adaptation Action for a Changing Arctic - Bering/Chukchi/Beaufort regional report for the Arctic Monitoring and Assessment Program.

2:15 p.m. – 3:00 p.m.

HONORABLE FRAN ULMER, CHAIR, U.S. ARCTIC RESEARCH COMMISSION

Summary of the 2017-2018 USARC Goals Report Highlighting Progress in Arctic Research and the New Interagency Arctic Research Policy Committee’s 5-year Plan



The U.S. Arctic Research Commission (USARC) recently released its “Report on the Goals and Objectives for Arctic Research 2017-2018 for the U.S. Arctic Research Program” (Goals Report). Emphasizing the need for continued scientific research in all of its six major goals, the Commission released new recommendations for these goals. In addition, the Commission also calls attention to progress made on these goals over the past two years.

Building upon the Goals Report, the Interagency Arctic Research Policy Committee (IARPC) in mid-December released the second comprehensive Arctic Research Plan covering the years 2017-2021. The new plan supports U.S. policy across a range of scales, from Arctic people and communities to the global scale. The research described in the Arctic Research Plan 2017-2021 is organized into nine research goals: health and well-being; atmosphere; sea ice; marine ecosystems; glaciers, ice caps and the Greenland ice sheet; permafrost; terrestrial and freshwater ecosystems; coastal resilience; and environmental intelligence (observations, data, and models). The Arctic Research plan will be implemented using the innovative IARPC Collaborations Website (www.arcticcollaborations.org).

Fran Ulmer is chair of the U.S. Arctic Research Commission, where she has served since being appointed by President Obama in March 2011. In June 2010, President Obama appointed her to the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling. From 2007 to 2011, Ulmer was chancellor of Alaska’s largest public university, the University of Alaska Anchorage (UAA). Before that, she was a Distinguished Visiting Professor of Public Policy and Director of the Institute of Social and Economic Research at UAA. Ulmer is a member of the Global Board of the Nature Conservancy and on the Board of the National Parks Conservation Association.

Ulmer served as an elected official for 18 years as the mayor of Juneau, a state representative, and as Lieutenant Governor of Alaska.



Keynote Speakers

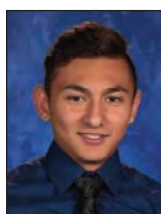
2:15 p.m. – 3:00 p.m.

MACY KENWORTHY AND CADE TERADA, U.S. ARCTIC YOUTH AMBASSADORS
Our Experiences as Arctic Youth Ambassadors and the Future of Alaska's Arctic

Two of the Arctic Youth Ambassadors from Alaska will share their experiences with the program over the past year and their thoughts about the future of Alaska's Arctic.



Macy Rae Kenworthy is a 20-year-old U.S. Arctic Youth Ambassador from Kotzebue and Sisualik, Alaska. She graduated from Mt. Edgecumbe High School, a boarding school in Sitka, and is currently enrolled at the University of Alaska Fairbanks. Aside from the Arctic Youth Ambassadors Program, Macy has taken advantage of a number of opportunities to be involved in her community, including being elected vice president of her local youth council. Along with voicing her concerns and issues, such as climate change impacts, to a broad audience including scientists and policy makers, Macy hopes to see more young people become interested and involved in their communities.



Cade (Emory) Terada is a Japanese American from Dutch Harbor, Alaska. He recently graduated from Unalaska City School and is an active youth organizer for Alaska Youth for Environmental Action. He is a member of the local Teen Council where he works to empower youth in his community. His father had always encouraged him to help others as much as he possibly could. Cade enjoys hiking, cross country running, traveling, and meeting new people as well as drama, debate, and forensics. Cade is interested in representing his community because of its dependence on the seafood industry. Cade credits the seafood industry for making Dutch Harbor his home. He wants to represent his community as an ambassador, a place that is changing due to climate change. As an Arctic Youth Ambassador, he represented Alaska on the 2016 Students on Ice Program in Northern Canada and Greenland, and has presented at national and regional conferences.

3:00 p.m. – 3:30 p.m. COFFEE BREAK

3:30 p.m. – 4:15 p.m.

DR. NICHOLAS PYENSON, SMITHSONIAN INSTITUTION'S NATIONAL MUSEUM OF NATURAL HISTORY

Tracing the Evolution and Extinction of High Latitude Marine Megafauna



For the past 250 million years, backboned animals have returned to the water from ancestors that once lived on land. Today, these kinds of animals include whales, sea cows, sea otters, and even sea turtles. They are all unrelated to one another, but in many cases, have evolved similar solutions to the challenges of living the life aquatic. We know that marine invaders also lived during the time of the dinosaurs, such as mosasaurs, ichthyosaurs and plesiosaurs, among others. However, we know little about the fossil record of these organisms at

high latitudes, near the poles, where we find the richest ecosystems to support marine invaders today.

Alaska is singular among high-latitude regions in possessing a geologic history that records the evolution and extinction of many of these invaders. Starting with the extinction of the Steller’s sea cow on the Aleutian Islands, this history deepens heading eastwards, to Oligocene fossil marine mammals without analog from sites in Southeastern Alaska, to Mesozoic-era marine tetrapods from the Brooks Range. Understanding this record provides important benchmarks for the ecological fate of today’s Arctic marine mammals in the rapidly changing Anthropocene.

Nicholas Pyenson is the curator of fossil marine mammals at the Smithsonian Institution’s National Museum of Natural History, in Washington, D.C. He received his Ph.D. from the University of California, Berkeley, and completed his postdoctoral work at the University of British Columbia. As a vertebrate paleontologist, his scientific research focuses on how different kinds of four-limbed animals have repeatedly invaded oceans from land ancestry over the past 250 million years – an evolutionary cross-section of vertebrate life that includes sea turtles, seabirds, and especially marine mammals, such as whales.

A National Geographic Explorer, he has done scientific fieldwork on every continent, and led over a dozen scientific expeditions during the last decade, with a strong focus on paleontological exploration, anatomical discovery, international mentorship, and 3D digitization for museum collections. Along with his scientific collaborators, he has named over a half-dozen new species of fossil whales, discovered the richest fossil whale graveyard on the planet, and described an entirely new sensory organ in living whales.

4:15 p.m. – 5:00 p.m.

DR. NICHOLAS BOND, JOINT INSTITUTE FOR THE STUDY OF THE ATMOSPHERE AND OCEAN OF THE UNIVERSITY OF WASHINGTON

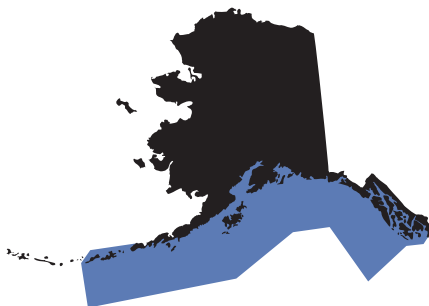
The Recent Marine Heat Wave in Alaska: A Dress Rehearsal for Climate Change?



Alaska and its surrounding waters have experienced remarkably warm temperatures during the past few years. What happened, and how does this recent event compare with past warm events? Does it represent a preview of the regional conditions and ecosystem responses that will accompany future global climate change? These questions will be addressed drawing on examples from the Gulf of Alaska, Bering Sea, and Arctic.

Nick Bond is a principal research scientist with the Joint Institute for the Study of the Atmosphere and Ocean of the University of Washington, and is affiliated with NOAA’s Pacific Marine Environmental Laboratory. He is the State Climatologist for Washington. His research covers a broad range of topics, with a focus on the weather and climate of the Pacific Northwest and the linkages between the climate and marine ecosystems of Alaska.

Gulf of Alaska Plenary Session



Tuesday, January 24 7:30 a.m. – 5:00 p.m.

7:30 A.M. – 8:00 A.M. CONTINENTAL BREAKFAST

CLIMATE & OCEANOGRAPHY

- 8:00 - 8:15 **Shannon Atkinson** A Perfect Storm in the Gulf of Alaska: Factors Contributing to the 2015-2016 Common Murre Die-off
- 8:15 - 8:30 **Kristine Holderied** Interannual Oceanographic Variability and the Estuarine Response to the Pacific Warm Anomaly in Kachemak Bay Alaska
- 8:30 - 8:45 **Zhen-Gang Ji** Oil-Spill Risk Analysis in Cook Inlet, Alaska
- 8:45 - 9:00 **Seth Danielson** The Glacier Bay Buffet (A 24-hour Seafood Eatery, Open Summer Season Only)
- 9:00 - 9:15 **Darcy Dugan** Introducing the Alaska Ocean Acidification Network

LOWER TROPHIC LEVELS

- 9:15 - 9:30 **Petra Lenz** Emergence from Diapause in *Neocalanus flemingeri* Females: Physiological and Morphological Progression
- 9:30 - 10:00 BREAK
- 10:00 - 10:15 ***Sarah Traiger** Supply and Survival: Kelp Microscopic Life Stage Challenges Across a Glacial Gradient
- 10:15 - 10:30 ***Benjamin Weitzman** Can You Dig It? Patterns of Variability in Clam Assemblages Within Mixed-sediment Habitats Across the Gulf of Alaska
- 10:30 - 10:45 **Elizabeth Tobin** Identifying Environmental Drivers of *Alexandrium* Harmful Algal Blooms in Southeast Alaska
- 10:45 - 11:00 **Russell Hopcroft** Three in a Row: Continued Warm Conditions Along the Gulf of Alaska's Seward Line

FISHES & FISH HABITATS

- 11:00 - 11:15 ***Thomas Farrugia** How Many Fish Are in this Barrel? Sustainably Harvesting Two Easily Caught Skate Species
- 11:15 - 11:30 **John Eiler** Tracking Marine Fish with an AUV Equipped with Payload Control
- 11:30 - 1:00 LUNCH PROVIDED

- 1:00 - 1:15 ***Julie Nielsen** Spatial and Temporal Scales of Site Fidelity for Adult Pacific Halibut in an Alaskan Fjord
- 1:15 - 1:30 ***John Trochta** Insights into the Dynamics of Atlantic and Pacific Herring Following Population Collapse

SEABIRDS

- 1:30 - 1:45 ***Ann Eckmann** Efficacy of Thermal Imaging for the Study of Seabirds

MARINE MAMMALS

- 1:45 - 2:00 **David Rosen** Trained Steller Sea Lions in the Open Ocean: A Decade of Shedding Light on the Energetic Consequences of Foraging in the Wild
- 2:00 - 2:15 ***Courtney Pegus** Evaluating the Accuracy of Remote Sensing Imagery from Watercraft and Unmanned Aerial Vehicles (UAV's) to Quantify Iceberg Habitats Utilized by Pinnipeds in the Gulf of Alaska
- 2:15 - 3:00 BREAK

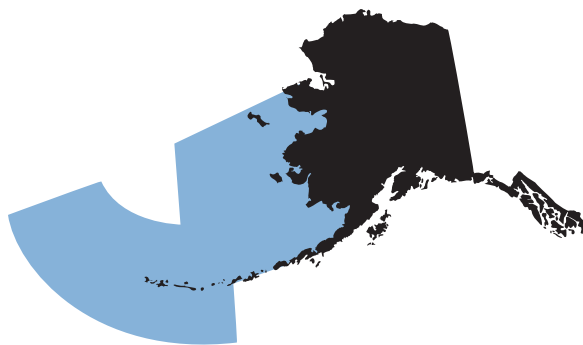
HUMAN DIMENSIONS

- 3:00 - 3:15 ***Elizabeth Figus** Comparing Experiences with Bycatch Across Fishermen Targeting Pacific Halibut (*Hippoglossus stenolepis*)
- 3:15 - 3:30 **Lauren Sill** Assessing the Resilience and Adaptive Capacity of the Community of Yakutat, Alaska Through the Lens of Subsistence

ECOSYSTEM PERSPECTIVES

- 3:30 - 3:45 **Anne Beaudreau** Twenty-five Years after the Exxon Valdez Oil Spill: A Synthesis of Climatic, Anthropogenic, and Ecological Drivers of Gulf of Alaska Communities
- 3:45 - 4:00 **Lisa Sztukowski** Nearshore Marine Consumer Responses to Changing Prey Conditions: Combining Quantitative and Qualitative Model Input into a Conceptual Framework
- 4:00 - 4:15 ***Szymon Surma** Energy-based Ecosystem Modeling of Pacific Herring Trophodynamics
- 4:15 - 4:30 **Alan Mearns** Mearns Rock: Twenty-six Years and Twenty-six Photos that Put a Human Dimension on Understanding Longterm Biological Variability
- 4:30 - 5:00 **Mandy Lindeberg** Gulf Watch Alaska: Results from Five Years of Ecosystem Monitoring in the Northern Gulf of Alaska
- 6:00 - 7:15 Tuesday Poster Session - Wave 1
- 7:15 - 8:30 Tuesday Poster Session - Wave 2

Bering Sea & Aleutian Islands Plenary Session



Wednesday, January 25 7:30 a.m. – 5:00 p.m.

7:30 A.M. – 8:00 A.M. CONTINENTAL BREAKFAST

CLIMATE & OCEANOGRAPHY

- 8:00 - 8:15 **Carol Ladd** Cross-isobath Exchange in Bering Canyon
- 8:15 - 8:30 **Phyllis Stabeno** Will Stanzas Dominate the Oceanography of the Bering Sea Shelf, Including the North?
- 8:30 - 8:45 **Yongchui Zhang** Eddy-induced Transport Across the Bering Slope in the Bering Sea
- 8:45 - 9:00 **Al Hermann** Statistical Downscaling of Global Projections to the Bering Sea, Based on an Ensemble of Regional Model Output

LOWER TROPHIC LEVELS

- 9:00 - 9:15 **Michael Lomas** Time-series of Direct Primary Production Observations on the Bering Sea Shelf
- 9:15 - 9:30 **David Kimmel** Copepods Differ in Phenology, Size Distribution, and Estimated Production Rates Across Warm and Cold Periods in the Eastern Bering Sea
- 9:30 - 10:00 **BREAK**
- 10:00 - 10:15 **Lisa Eisner** Coccolithophores in the Bering Sea
- 10:15 - 10:30 **Calvin Mordy** Spatiotemporal Variability of Nitrogen Deficits on the Eastern Bering Sea Shelf

FISHES & FISH HABITATS

- 10:30 - 10:45 **Stan Kotwicki** Detecting Fish Distribution - A Complex Task for Walleye Pollock and Other Semipelagic Species
- 10:45 - 11:00 **Craig Rose** Preliminary Assessment of the Use of Satellite-reporting Accelerometer Tags to Monitor Survival of Trawler Deck-released Halibut
- 11:00 - 11:15 ***Katie Shink** Characterizing the Diet of Arctic Lamprey (*Lethenteron camtschaticum*) Using Molecular Gene-based Techniques
- 11:15 - 11:30 ***Aileen Nimick** Adapting a Fishing Impacts Model to Simulate Fishing Gear Modifications

11:30 - 1:00 LUNCH (ON YOUR OWN)

SEABIRDS

- 1:00 - 1:15 **Shiway Wang** The Importance of Marine Resources for Threatened Spectacled Eiders Breeding in Alaska
- 1:15 - 1:30 **Martin Renner** 40 Years of Change in the SE Bering Sea: Climate, Prey, Seabirds, and Long-term trends
- 1:30 - 1:45 ***Alexis Will** Historical Ecophysiology Reveals the Timing of Food Shortages Experienced by Red-legged Kittiwakes

MARINE MAMMALS

- 1:45 - 2:00 ***Jenell Larsen** Old Ovaries, New Tricks: What Walrus Ovaries Can Tell Us About Population Fluctuations
- 2:00 - 2:15 **Patrick Charapata** Bone Steroid Hormone Concentrations Reveal Pacific Walrus Physiology from the Past 3,450 Years
- 2:15 - 2:30 **Jeremy Sterling** Looking Back to the 19th Century to Move Northern Fur Seals Forward into an Ecosystem Based Fisheries Management Plan

2:30 - 3:00 BREAK

HUMAN DIMENSIONS

- 3:00 - 3:15 **Jennifer Schmidt** Adaptation to Environmental Change in Three Aleutian Island Communities
- 3:15 - 3:30 **Tahzay Jones** Visualizing Impacts of Projected Changes in Marine Vessel Traffic Using Spatially and Seasonally Explicit Simulation Models
- 3:30 - 3:45 ***Jordan Watson** Are Some Vessels Within a Fleet More Resilient to Climate Variability than Others? A Case Study from the Bering Sea Pollock Fishery

ECOSYSTEM PERSPECTIVES

- 3:45 - 4:00 **Karen Pletnikoff, Amy Holman, and Aaron Poe** Alaskan Decision Makers Speak up on Coastal Resilience and Adaptation: 'Click Here' to Help Connect the AMSS Community with Their Science Needs
- 4:00 - 4:15 **Jesika Reimer** Assessing the Risk of Marine Invasive Species in the Bering Sea
- 4:15 - 4:30 **Elizabeth Siddon** The Bering Sea Warm Stanza Continues: Ecosystem Effects and Potential Outcomes
- 4:30 - 4:45 **Douglas Causey** The "Warm Blob" and a Cold Sea: Large-scale Trophic Perturbations in the Aleutian Islands
- 4:45 - 5:00 **Best Student Poster Presentation Award**

Arctic Plenary Session



Thursday, January 26 7:30 a.m. – 5:00 p.m.

7:30 A.M. – 8:00 A.M. CONTINENTAL BREAKFAST

CLIMATE & OCEANOGRAPHY

- 8:00 - 8:15 **Andrew Mahoney** High-Resolution Prediction and Real-Time Observations of Arctic Sea Ice and Currents
- 8:15 - 8:30 ***Ying-Chih Fang** Surface Current Patterns in the Northeastern Chukchi Sea and Their Response to Wind Forcing
- 8:30 - 8:45 **Peter Winsor** The ARCTic Tracer Release EXperiment (ARCTREX): Results from the Release of Passive Tracers in the Chukchi Sea
- 8:45 - 9:00 ***Min Li** Circulation of the Chukchi Sea Shelfbreak and Slope from Moored Timeseries
- 9:00 - 9:15 **Thomas Weingartner** Transport and Hydrographic Variability in Barrow Canyon on the Northeastern Chukchi Sea Shelf
- 9:15 - 9:30 **Burke Hales** New Observations of Surface Water Carbonate Chemistry
- 9:30 - 10:00 **BREAK**

LOWER TROPHIC LEVELS

- 10:00 - 10:15 **Sarah Hardy** Infaunal Communities on the Beaufort Sea Shelf and Slope: Insights from Morphological and Environmental DNA Sequencing Approaches
- 10:15 - 10:30 ***Tanja Schollmeier** Tracing Sea Ice Algal Production into Various Benthic Feeding Types on the Chukchi Sea Shelf
- 10:30 - 10:45 **Victoria Hill** Using Optical Measurements to Investigate Under-ice Warming, Primary Production, and Photo-oxidation in the Upper Arctic Ocean

FISHES & FISH HABITATS

- 10:45 - 11:00 **Louise Copeman** Temperature Impacts on the Eggs and Larvae of Alaskan Gadids
- 11:00 - 11:15 **Johanna Vollenweider** Arctic Coastal Ecosystems: Evaluating the Functional Role and Connectivity of Lagoon and Nearshore Habitats
- 11:15 - 11:30 **Elizabeth Logerwell** Environmental Drivers of Benthic Fish Distribution in and around Barrow Canyon in the Northeastern Chukchi Sea and Western Beaufort Sea

11:30 - 1:00 LUNCH PROVIDED

1:00 - 1:15 **Michael Courtney** Dispersal Patterns and Summer Ocean Distribution of Adult Dolly Varden in the Beaufort Sea, Evaluated with Satellite telemetry

SEABIRDS

1:15 - 1:30 ***Ann Riddle** Assessing Hydrocarbon Sensitivity and Measuring Current CYP1A Activity in Arctic Marine Birds and Waterfowl

MARINE MAMMALS

1:30 - 1:45 **J Craig George** Frequency of Injuries from Line Entanglements, Killer Whales, and Ship Strikes on Bering-Chukchi-Beaufort Seas Bowhead Whales

1:45 - 2:00 **Michael Cameron** Influence of Benthic Communities and Environmental Characteristics on Bearded Seal Foraging Ecology

2:00 - 2:15 **Erin Moreland** Thermal Detection of Polar Bears on Sea Ice Using an Automated Image Collection and Analysis System

2:15 - 2:30 **Irina Trukhanova** Combined Seal and Polar Bear Aerial Survey on Ice in the Western Chukchi Sea and Eastern Part of the East Siberian Sea, Spring 2016

2:30 - 3:00 BREAK

3:00 - 3:15 **Kathi Lefebvre** Exposure Risks and Health Effects of Algal Toxins in Marine Mammals Using Both Environmental Surveillance and Biomedical Laboratory Models

HUMAN DIMENSIONS

3:15 - 3:30 **Karen Brewster** Living with Sea Ice: Voices from Barrow and Kotzebue

3:30 - 3:45 **Candace Nachman** Scientific Research & Subsistence: Protocols to Ensure Co-Existence

3:45 - 4:00 **Stephen Braund** Social Indicators in Alaska: Arctic Communities

ECOSYSTEM PERSPECTIVES

4:00 - 4:15 **Sue Moore** The Arctic Marine Pulses Model: Linking Annual Oceanographic Processes to Contiguous Ecological Domains in the Pacific Arctic

4:15 - 4:45 **Kenneth Dunton & Jeremy Kasper** An Integrated Look at the Alaska Beaufort Sea

4:45 - 4:55 **Best Student Oral Presentations Winners Announced**

4:55 - 5:00 **Closing Remarks**

Workshops

Workshops held at Hotel Captain Cook

All Week

Lactation Station

8:00 a.m. – 5:00 p.m., Library

Media Room

8:00 a.m. – 5:00 p.m., Easter Island Room

AOOS Film Contest Entries

9:00 a.m. – 5:00 p.m., Endeavor Room

The Alaska Ocean Observing System has held its short film contest for the last three years and received many great films. Please stop by the Endeavor Room downstairs at the Captain Cook hotel any time Monday through Friday to view some of these films. We will be showing a loop of films that have been entered in our contest for this past year.

Monday 1/23

Communicating Ocean Sciences Workshop

8:00 a.m. – 12:00 p.m., Foredeck & Discovery Ballroom

Whether you are a scientist just beginning to communicate your science beyond your fellow scientists or ready to try new approaches and media, this workshop will have something for you. If you are a science teacher, outreach specialist or community educator, this workshop will have something for you too! For the past ten years, the workshop event organizers have provided practical information, great speakers, and information on current best practices in education, outreach, and media. This year, we will provide strategies for communicating science to Alaska school and community audiences in ways that it can be immediately used and applied. This will be followed by time in break-out sessions to delve into the practical “how to’s” of these approaches to improve your efforts. The workshop is sponsored by the North Pacific Research Board, Alaska Sea Grant, Alaska Ocean Observing System, and NOAA Alaska Fisheries Science Center.

Metadata for Models

10 a.m. – 12:00 p.m., Club Room 1

Hosted by North Pacific Research Board (NPRB) and Axiom Data Science, this workshop will focus on developing a set of best practices for data management and documentation related to model-based research projects. This workshop aims to foster a discussion between modelers, funders, and data managers, with the goal of identifying best practices for a practical, implementable data management policy for modeling-based research projects. NPRB will present the goals and intent for data and metadata archival and sharing and outline scenarios for distinct categories of model-based projects. Axiom will present a general template for documenting and preserving the outputs from modeling-based projects. Participants are asked to actively contribute to the discussion and provide ideas and suggestions for establishing best practices and guidelines. Modelers and other domain experts are invited to attend. The topics covered at the workshop include:

- *current approach to data and metadata review and archival for modeling practices;*
- *expected deliverables and preservation needs;*
- *documentation needs throughout the workflow; and*
- *the appropriate content and format for metadata.*

Tuesday 1/24

500 Women Scientists Meet Up

11:30 a.m. – 1:00 p.m., Resolution Room

Thousands have signed the 500 Women Scientists open letter. We are creating a network of support that is larger than we could have imagined. The goals for our meet up are to give female scientists the opportunities to network within their research fields, discuss common concerns facing women in science, and brainstorm strategies to make science more accessible. This is also a chance for current and prospective members of the 500 Women Scientists community to get an update on the organization's goals and activities and provide feedback on how the organization should focus its efforts.

Ocean Science Educators Night

5:30 p.m. – 7:30 p.m., Quadrant Room

Educators and scientists - Please join us from 5:30-7:30 pm in the Quadrant Room of the Captain Cook Hotel for the Ocean Science Week Educator Night, which will feature short presentations and Q&A with educators on connecting with scientists through Skype, Google hangout, and other methods. Find out more about K-12 educational resources relevant to Alaska's marine ecosystems. **(Required session for AMSS professional development course for teachers)**

Wednesday 1/25

Optimizing Ocean Observing: An Instrumentation Workshop

5:00 p.m. – 8:00 p.m., Whitby Room

RBR specializes in oceanographic quality CTD's, data loggers, and integration of various complementary sensor technologies. This workshop (typically 2-3hrs) will focus on some best practices, practical maintenance procedures, and a few tips and tricks to help get the most from your ocean observing equipment. In addition, we will introduce some theory behind common sensor technologies and have some fun with the latest functionality in Ruskin; compatible with both Mac and PC's. Attendees are strongly encouraged to bring laptops as Ruskin will be provided and heavily utilized throughout the afternoon. To learn more about RBR and download Ruskin prior to the workshop, feel free to visit RBR-GLOBAL.COM.

Thursday 1/26

Arctic Research Planning Night

7:00 p.m. – 9:00 p.m., Quarterdeck

Fairweather Science is hosting the annual Arctic Research Planning Night at the Quarterdeck. This event is held to facilitate collaboration and knowledge sharing among Arctic researchers. We welcome everyone interested in discussing Arctic research. As with previous years, please either send in advance or bring a thumb drive with a few slides that outlines your research plans for 2017 and beyond. Please include vessel, location of study, duration of cruise, objectives, types of data to be collected, available bunk space, and length of contract. Slides may be sent to Sheyna Wisdom at Fairweather Science (sheyna.wisdom@fairweather.com). No RSVP is required and it is an open invitation. Beer/wine and appetizers will be provided by Fairweather Science.

Friday 1/27

The Alaska Marine Mammal Stranding Network

8:00 a.m. – 12:00 p.m., Quadrant Room

The agenda will be dependent upon network member participation, and we hope to at least get network member updates out to the group. There will be presentations about member organization's stranding-related activities this past year.

Introduction to Metadata Workshop

8:00 a.m. – 11:00 a.m., Resolution Room

This workshop will provide an introduction to metadata for documenting scientific data. The presentation will define the value of metadata, why federal agencies are required to create it, describe the role of metadata in data management and distribution, briefly explain the origin of the Federal Geographic Data Committee (FGDC) metadata standard and the Biological Data Profile, give an update on the status of the suite of ISO standards (19115, etc.), illustrate ways in which a metadata program can be implemented, and how to search and submit records using the US Geological Survey's Core Science Metadata Clearinghouse. The workshop will cover various tools available for metadata creation, look at the elements of the FGDC standard and some best practices in creating an FGDC-compliant metadata record. For more information, visit FGDC's website, www.fgdc.gov, or the USGS Core Science Metadata Clearinghouse website, <http://mercury.ornl.gov/clearinghouse>.

Arctic IERP and Collaboration Opportunities

9:00 a.m. – 12:00 p.m., Aft Deck

Lead Principal Investigators for the Arctic Integrated Ecosystem Research Program will provide an overview of the scope of the program, including dates and locations of field work, and sampling plans. The Arctic IERP will conduct cruises in 2017, 2018, and 2019. The program includes a social science component as well. The majority of the workshop will be dedicated to discussion of collaboration opportunities. Several projects have already committed to collaborating, and new collaborators are welcome. Collaborators participate in annual PI meetings and share data via a private data portal. We hope that researchers who have plans to conduct work in the northern Bering or Chukchi Seas in coming years will participate in the workshop to discuss coordination and collaboration.



Alaska Coastal Marine Institute Review

11:00 a.m. – 5:15 p.m., Quarterdeck

This workshop will present updates on current environmental research funded through the Coastal Marine Institute (CMI) to inform management of petroleum resources in Alaska's Outer Continental Shelf regions. The CMI is a collaboration between the University of Alaska, the Bureau of Ocean Energy Management, and the State of Alaska. This is the first year that CMI student funded research will also be presented. The public is encouraged to attend and participate in learning about ongoing research programming.

The US-Canada Transboundary Fish and Lower Trophic Survey

1:00 p.m. – 5 p.m., Aft Deck

We present the final results of the first systematic survey of both the U.S. and Canadian Beaufort shelf and slope to 1000 meter depths, including the Mackenzie Canyon. These results include distribution, abundance and community analysis of fish, epifauna, infauna and zooplankton, which along with diet and isotopes, provides new understanding of the Beaufort Sea foodweb. This new understanding provides the wider scientific community baseline data across multiple scales, within the Arctic, the Beaufort Region, sub regions, shelf communities, slope communities and is especially useful for documenting and understanding climate change—the biggest scientific issue of our era. BOEM will apply this new understanding to analyze potential effects, develop mitigation, regulate and monitor oil, gas and renewable energy in the federal waters of the Beaufort Sea.

Cook Inlet Beluga Management, Research, and Partnership Opportunities

1:00 p.m. – 5 p.m., Quadrant Room

Does your work involve studying, monitoring, managing, permitting, or funding projects for Cook Inlet beluga whales? Do you want to share your knowledge, collaborate with, or develop partnerships with others conducting similar activities? If so, consider participating in the Cook Inlet Beluga Whale Management, Research, and Partnership Opportunities session during the 2017 Alaska Marine Science Symposium. The tentative agenda includes conference-style presentations followed by a panel discussion to foster information sharing, collaboration, and improved partnership opportunities amongst groups.

Exhibitors

AOOS

ASL Environmental Sciences Inc

BOEM

Cook Inlet Regional Citizens Advisory Council

Fairweather Science

John P. Norton, Illustrator

NOAA Fisheries

NortekUSA

NPRB

Oceanic Research Services

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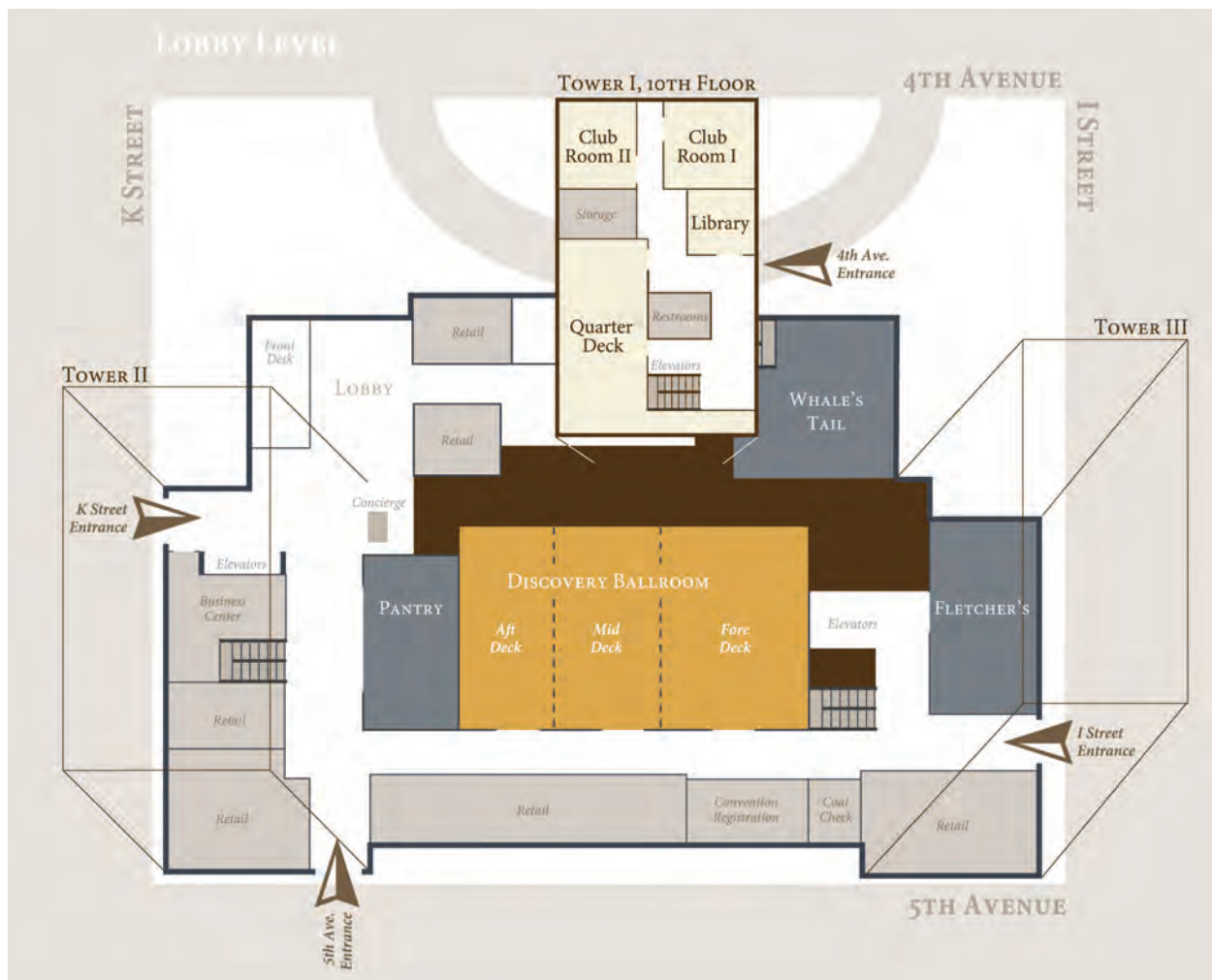
UAS Fisheries Technology

USARC

USGS

Venue Maps

Hotel Captain Cook, 939 W. 5th Ave. Lobby Level and Tower



Shuttle service is provided between the Hotel Captain Cook (939 W. 5th Ave.) and the Egan Center (555 W. 5th Ave.) from 5:45 p.m. – 8:45 p.m. for those going to and from Poster Sessions.

Hotel Captain Cook, Lower Lobby Level

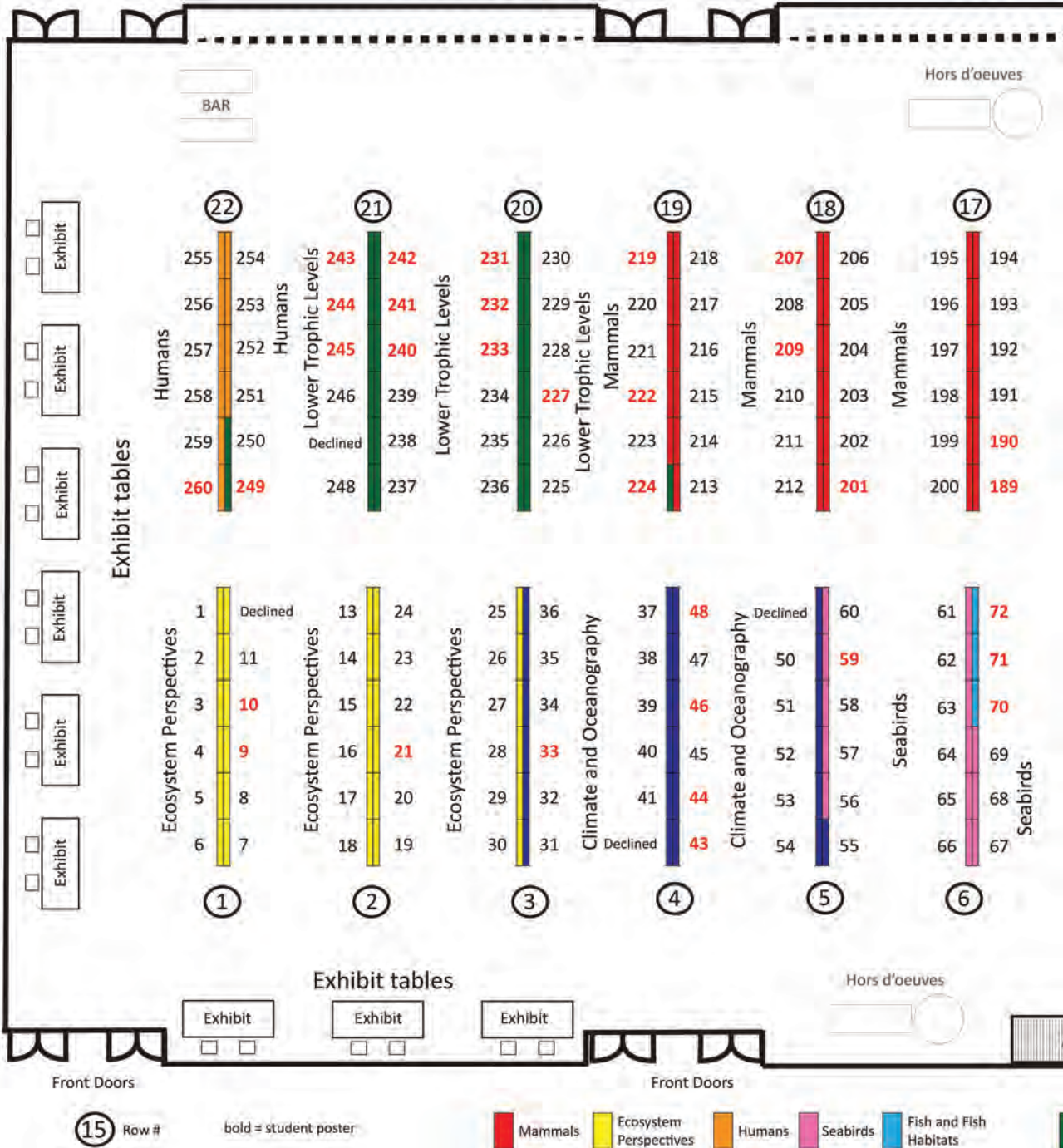


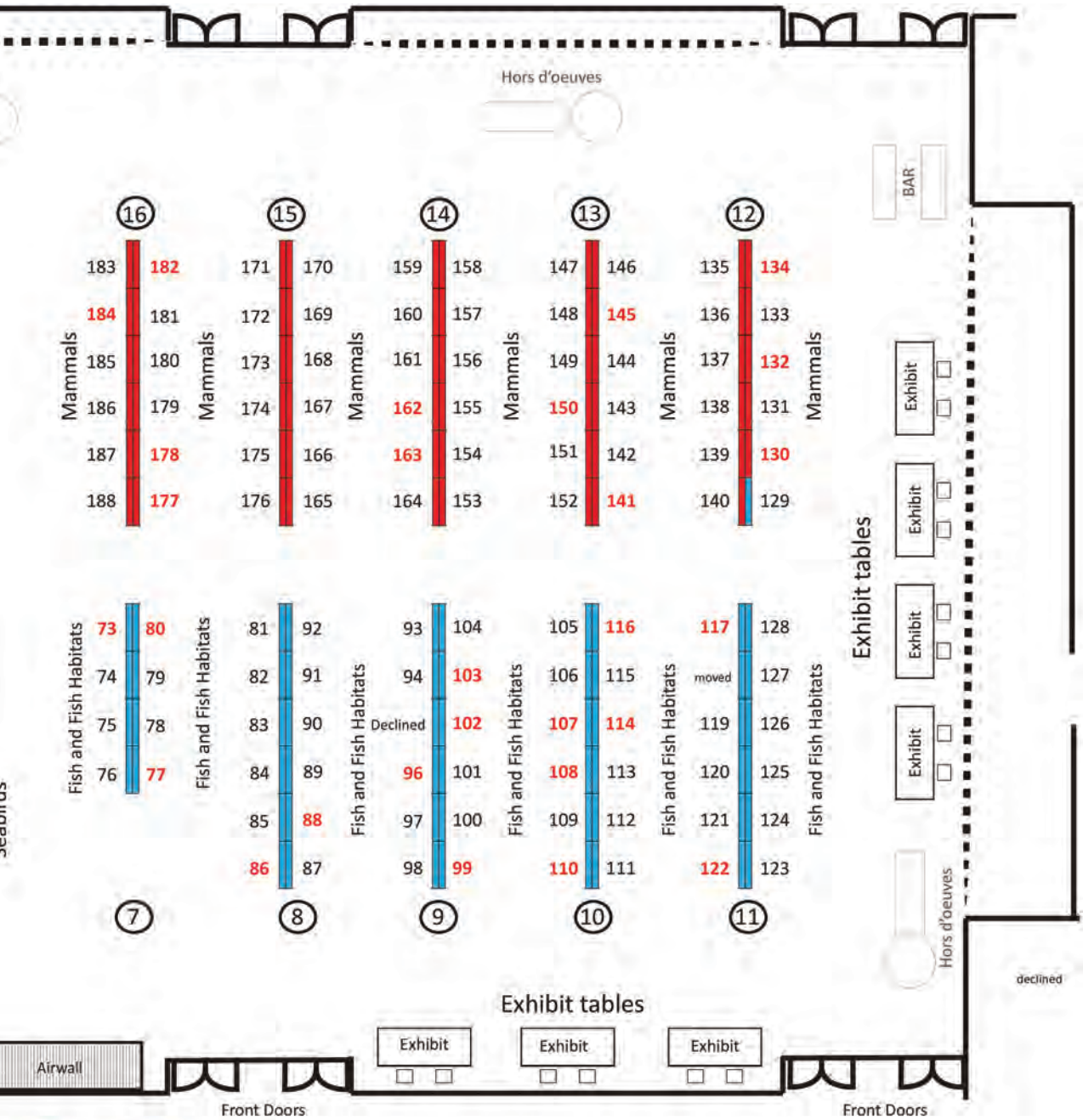
Shuttle service is provided between the Hotel Captain Cook (939 W. 5th Ave.) and the Egan Center (555 W. 5th Ave.) from 5:45 p.m. – 8:45 p.m. for those going to and from Poster Sessions.

Venue Maps

Egan Civic & Convention Center, 555 W. 5th Ave. Explorers Hall

Shuttle service is provided between the Hotel Captain Cook (939 W. 5th Ave.) and the Egan Center (555 W. 5th Ave.) from 5:45 p.m. – 8:45 p.m. to assist those needing transportation to and from the Poster Sessions.





Lower Trophic Levels Climate and Oceanography

Thank You!

The Symposium would not have been possible without the help of many volunteers!

Thank you to the **AMSS Organizing Committee** and a special thanks to the following for a substantial contribution by coordinating key aspects of the Symposium:

Organizing Committee Chair
Crystal Benson-Carlough, NPRB

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Registration, Time Keeping, Student Judging, and Poster Volunteers
We Cannot Thank You Enough for Donating Your Time!

Thank You Sponsors!

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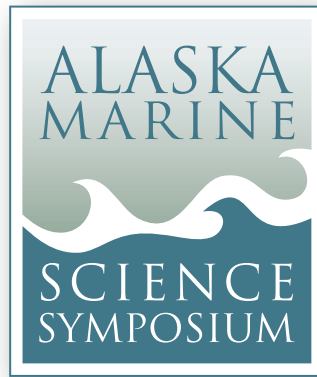
United States Arctic Research Commission



University of Washington, School of Aquatic and Fishery Sciences

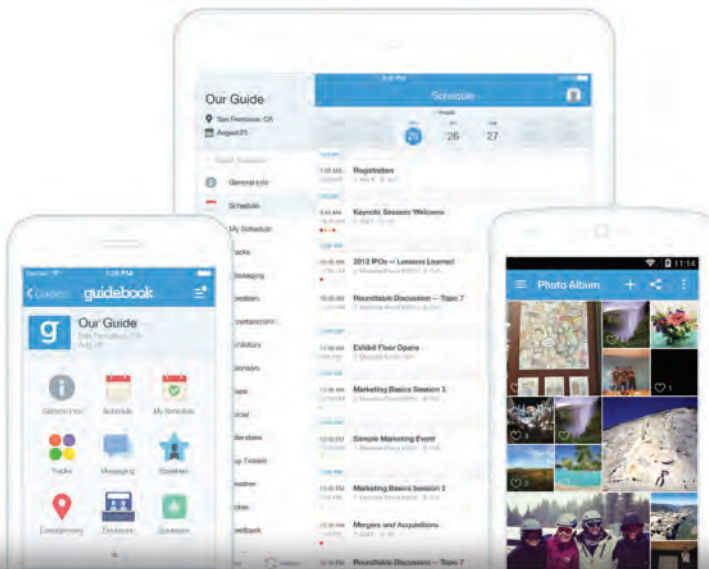


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