Alaska EPSCoR

University of Alaska
September 2020
vol. 2, no. 3

Alaska NSF EPSCoR is a partnership dedicated to growing Alaska's scientific research capacity, funded by the National Science Foundation and the State of Alaska.

COVID Challenges

Coastal Margins researchers cope with coronavirus restrictions

As Brenda Konar sees it, the masks and the social distancing are the easy part.

The real challenges of conducting fieldwork during a pandemic, Konar says, lie in the endless stream of paperwork, the 12-hour drives from Fairbanks to Homer without being allowed to enter a building along the way, and - most onerous of all – the two weeks her research team has had to quarantine before every week-long research trip.

photo by Brenda Konar

Coastal Margins graduate student Lindsey Stadler checks readings on an aquatic sensor in Kachemak Bay.

"There are about seven days a month that I'm either not in the field or not in quarantine," said Konar, co-lead of the Coastal Margins component and head of intertidal and oceanic fieldwork in Kachemak Bay. "I feel like a true homebody right now."

Konar and her research team aren't the only Coastal Margins researchers who have had to drastically alter their research plans in the era of COVID. In Kachemak Bay and Lynn Canal, across river and estuary-based research projects, scientists have had to make significant changes in order to continue their five-year project of data collection in the Gulf of Alaska nearshore and the rivers that feed it.

Many of Konar's challenges relate to the need to base her research out of the Kasitsna Bay Laboratory, a joint NOAA-UAF facility located across Kachemak Bay from Homer. The lab (which includes lodging) was closed entirely due to COVID restrictions in the early part of the summer, but reopened in June for essential research only. That means Konar has had to submit updated research and COVID safety plans both to NOAA and UAF each month to get permission to base out of the lab. Each researcher is required to have their own bathroom, which has limited her teams to a small complement of

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From the PI

Pips Veazey, Principal Investigator

Hello everyone,

It may feel like the world has been in stasis for the last seven months, but in reality things are continuing to change all the time. That's certainly the case here at EPSCoR, where we're in the process of saying goodbye to a pair of familiar faces.

First, Allison Bidlack, who served as director of the Alaska Coastal Rainforest Center and co-lead of the Fire and Ice Coastal Margins team, has left both positions to take a job as Depouty Director of the National Oceanic and Atmospheric Administration Auke Bay Laboratories. She began the new position in August.

In addition, Coastal Margins co-lead Anne Beaudreau will also be moving on; she's accepted a faculty position at the University

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Coastal Margins fieldwork

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six people, and various other restrictions have also prevented Konar from supplementing her team with undergraduate students or community volunteers. "What that means is when we get down there, we're working from the wee hours of the morning at first light through the evening, just to get everything done," she said.

"Everything" in this case means traveling by boat along the southern shores of Kachemak Bay to seine beaches for fish counts, to sample quadrats in the rocky intertidal zone, to collect samples for food web and other analyses, and to conduct zooplankton and phytoplankton tows. Team members are social distancing and wearing masks and are also required by NOAA to wear gloves at all times while on boats. Konar said the restrictions haven't hampered the research team, except that they've had to minimize scuba dives, which means being unable to check on some underwater sensors. "When you're diving, you're supposed to have buddy checks and be with your buddy," she said. "But how do you do that when you're supposed to be six feet away from your buddy?"

Photo by Anne Beaudreau

Anne Beaudreau records data at the Lemon Creek estuary with the help of her "research assistant," a rock on which she has balanced a YSI water sensor.

Across the Gulf of Alaska in Juneau, intertidal and ocean researchers led by Coastal Margins co-lead Anne Beaudreau have faced their own obstacles. Unlike in Kachemak Bay, however, all of the Juneau sites are accessible along the road system, which means no quarantines are needed. Beaudreau said they've largely met social distancing and travel requirements by splitting larger research teams into smaller groups of one or two.

"The way that this worked last year was that everything was a big team effort, so we had our big intertidal crew, three to five people doing all the sampling altogether," she said. "That's something we're missing, is that team feeling. Most things are able to get done, but sort of the joy of fieldwork is working as a team."

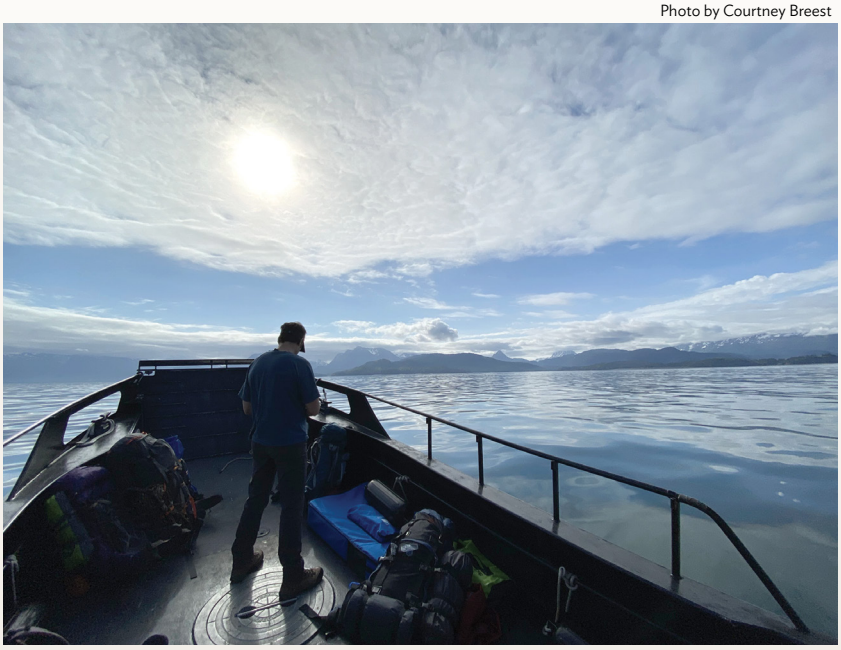
Like Konar, Beaudreau has had difficulty hiring undergrads due to COVID restrictions, which has meant fewer people available to do the work. But she said all of the tasks are getting done, with one notable exception: beach seining was cancelled for the year, because it was deemed impossible for researchers to maintain social distance while traveling to seining sites in small skiffs. Beaudreau said the cancellation is unfortunate but noted that the team already has some fish seining data for the area and will still be able to collect a multiyear dataset through Fire and Ice. "Presumably, if next summer's normal, we'll have two to three years of the full complement of beach seining data," she noted.

The other half of the Coastal Margins project is research by "Stream Teams," who are monitoring physical and chemical conditions on waterways on the Gulf of Alaska margin. The Kachemak Bay "Stream Team" also normally bases itself out of the Kasitsna Bay Lab, but has taken a different tack this summer. "We talked about it and said, only 'x' number of people can show up at the lab, and so because the Stream Team has a more flexible schedule, we volunteered to find other logistics," explained Coastal Margins co-lead LeeAnn Munk, head of the Kachemak Bay stream team. "Which means lodging in Homer and using a commercial water taxi for transportation."

Munk said the water taxi has presented some unexpected advantages: it saves time since Homer is actually slightly closer to most of their research sites than the lab, and the taxis are more appropriate landing craft than the boats available at the lab. On the other hand, Munk noted, the lodging and transport are both more expensive, and it's also precluding meeting and working with other Coastal Margins researchers. "The drawback is, we're not at the lab, and we're not able to interact with the intertidal people like we normally would."

For more information about EPSCoR Coastal Margins research, check out a new video overview on our YouTube channel.

Photo by Courtney Breest



Coastal Margins "Stream Team" faculty Eric Klein on a water taxi in Kachemak Bay.

The other downside to COVID restrictions, Munk said, is the stream team is also laboring with too small a workforce: only four people are participating in each research trip. "We're just operating at a bare minimum to get the work done," she said.

That sentiment is echoed by technician Emily Whitney, who is in charge of stream sampling in Lynn Canal and who has had to recruit a rotating cast of co-workers from the ranks of the project. "Part of it has been being a little more creative in finding new field partners," she said. "I've been kind of roping in everyone."

Whitney said the Lynn Canal researchers have addressed other restrictions by driving separate vehicles and sampling at a distance from one another. She noted they have also had to negotiate both UAS and U.S. Forest Service restrictions, since they have to use both UAS and USFS buildings to store and analyze samples. But she said the biggest challenge came early in the spring, when the team hurriedly placed their network of stream sensors in ice-choked waterways to have them in place before any new restrictions might prevent their installation. "We did a big push to get our sensors out and placed in the streams, with the idea that if all else fails, even if we don't get to them frequently, at least they are recording data," she said.

Indeed, delays, cancellations and improvisation in the early days of the pandemic were a common theme across research sites. Most everyone missed out on a couple of months of data collection in the spring before they were able to resume fieldwork in May or June. Munk said those first days of the pandemic were the most challenging from a fieldwork standpoint since they weren't able to install stream sensors in time for breakup, and there was genuine concern that the entire summer research season could be cancelled. "I was envisioning this 4-year set of data and there was a whole year missing," she said. "We just made the best of it and tried to be resilient, and I think we have been."

Considering how bleak and uncertain the situation looked in the spring, Munk said, Coastal Margins fieldwork has rebounded well, and the loss of a couple of months of data is a surmountable obstacle. Beaudreau echoed the sentiment. "In the scheme of it, I think it's pretty darn awesome that we only lost a couple of months and one part of the data set," she said. "Overall I don't think it's really going to be a huge detriment."

Letter from the PI

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of Washington, which she will begin in January. Although Anne will physically be far away, she will remain involved with her portion of the project, which focuses on estuaries and fish populations in Lynn Canal.

We're all excited for Allison and Anne as they begin these new chapters in their lives. Both of them were instrumental in shaping Coastal Margins research and have made many invaluable contributions to the project already. Their departures will be felt in Coastal Margins leadership, and we plan to address them through a combination of faculty, postdoc and graduate student contributions.

Neither Anne and Allison will be easy to replace, but we have a strong and growing list of EPSCoR researchers who will be able to pick up the slack. Thanks to all of you for being part of that team.

Sincerely,

Pips

Opportunities and Announcements

TREND awards

In partnership with the Alaska Technology Research and Development (TREND) Center at UAA, EPSCoR awarded 4 "Phase 0" awards in 2020 to Alaska startup businesses to assist them in applying for larger levels of federal funding. Awards went to:

- Barati Medical, LLC is developing an innovative instrument to monitor brain function and diseases in lab animals.
- Deeptree, Inc.,uses machine learning to provide real-time cybersecurity detection and response.
- BeadedStream LLC is developing an early-warning permafrost sensor that can be produced at a commercial scale.
- GRAYSTAR Pacific Seafood, Ltd. plans to market deep ocean water (seawater obtained at depths of 250-1,500 meters) as a nutraceutical beverage. GRAYSTAR has since received $100,000 from the USDA to market the product in one or more coastal Alaska communities.

Photo by Jeff Richardson/UAF

UAF researcher Bahareh Barati of Barati Medical demonstrates her prototype of an imaging device for laboratory animals.

Postdoc hire

The Coastal Margins team is hiring a postdoc in Nearshore Marine Ecology. Responsibilities of the Juneau-based position include developing original research related to Coastal Margins objectives; integrating datasets across study sites of Lynn Canal and Kachemak Bay; and helping to coordinate a field team to conduct ecological sampling at estuary sites along the Juneau road system.

Game Jam

In June, EPSCoR held a "Solstice Game Jam" in which participants were challenged to design Fire & Ice-themed video games. More than 30 people took part and 7 games were submitted: first prize went to a narrative game entitled "Extended Care Unit Room 19B," second place was a strategy game called "Climatic," and third-place winner "Alaska DataQuest," is a side-scrolling action game based on piloting aerial and undersea drones to collect data. The games are playable or downloadable online.

2021 Research Seed Grants

We're pleased to announce the availability of our 2021 line of Research Seed Grants, which support research with the potential to expand the depth and breadth of Fire & Ice efforts. Grants will be awarded in two categories: faculty grants of up to $20,000 each, and student grants of up to $4,000 each.

The deadline for submission of proposals is **5 PM AKDT October 12, 2020**. More information and applications can be found on the grants page of the EPSCoR website.

In addition, on August 20 we held a virtual "Seed Grants Methods and Approaches Workshop," which included information on the application process as well as discussions by project leads about which types of projects fit best within Fire & Ice research. A recording of the event is available for viewing online.

This material is based upon work supported by the National Science Foundation under award #OIA-1753748 and by the State of Alaska.

If you wish to be added to (or removed from) the EPSCoR newsletter mailing list or listserv, please contact Tom Moran at tmoran3@alaska.edu or (907) 474-5581.