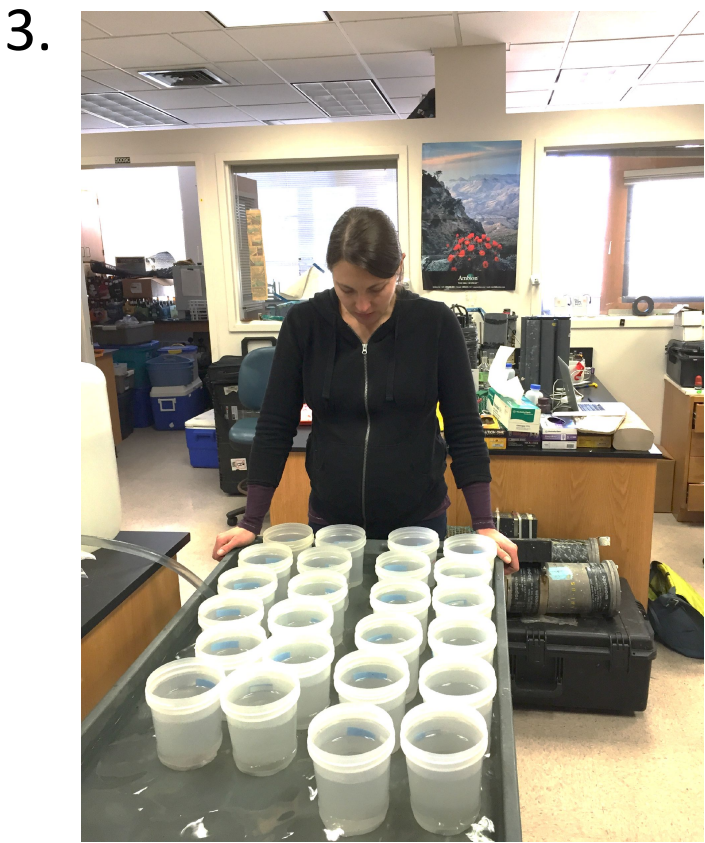
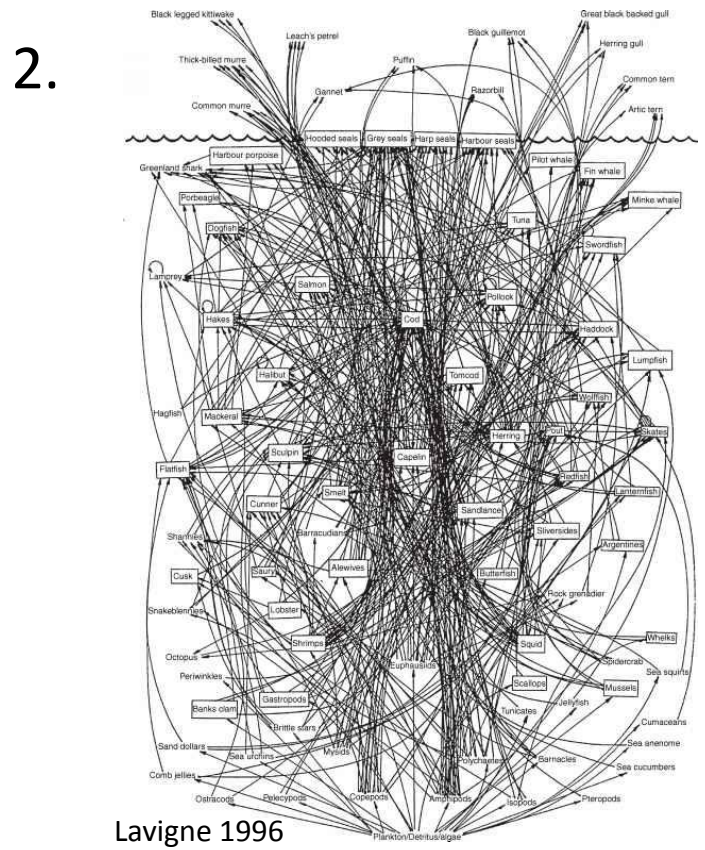
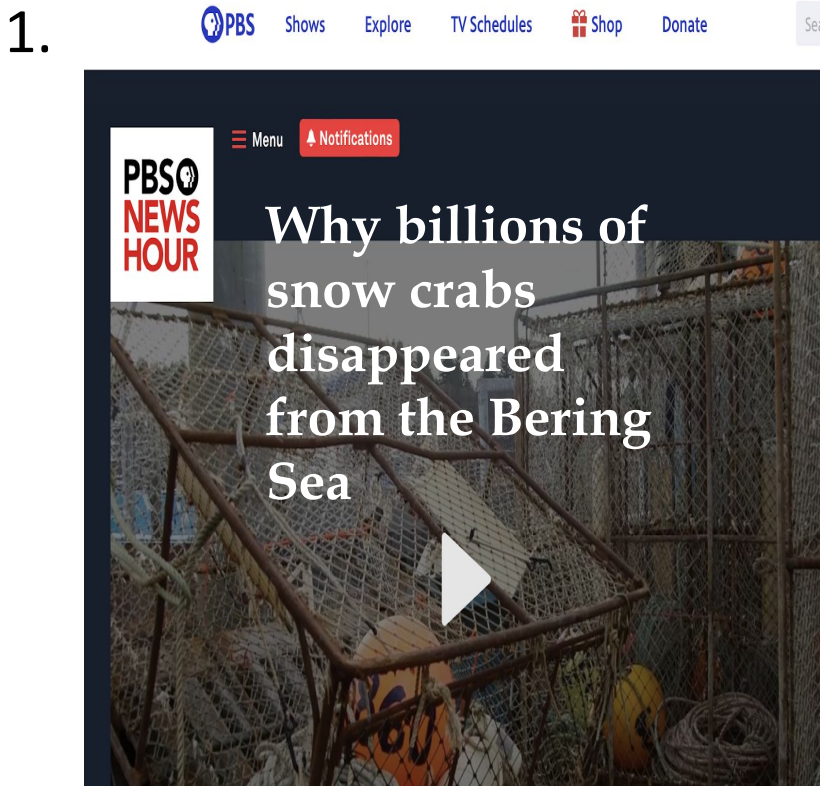


What role for collaborative science in our changing ocean?



Our challenges:

- 1. Rapid climate change (*that is outpacing management and science*)
- 2. Ocean is too wonderfully complex (*science is hard, solutions even harder*)
- 3. We are not really set up to do science differently (*gotta keep my head down*)



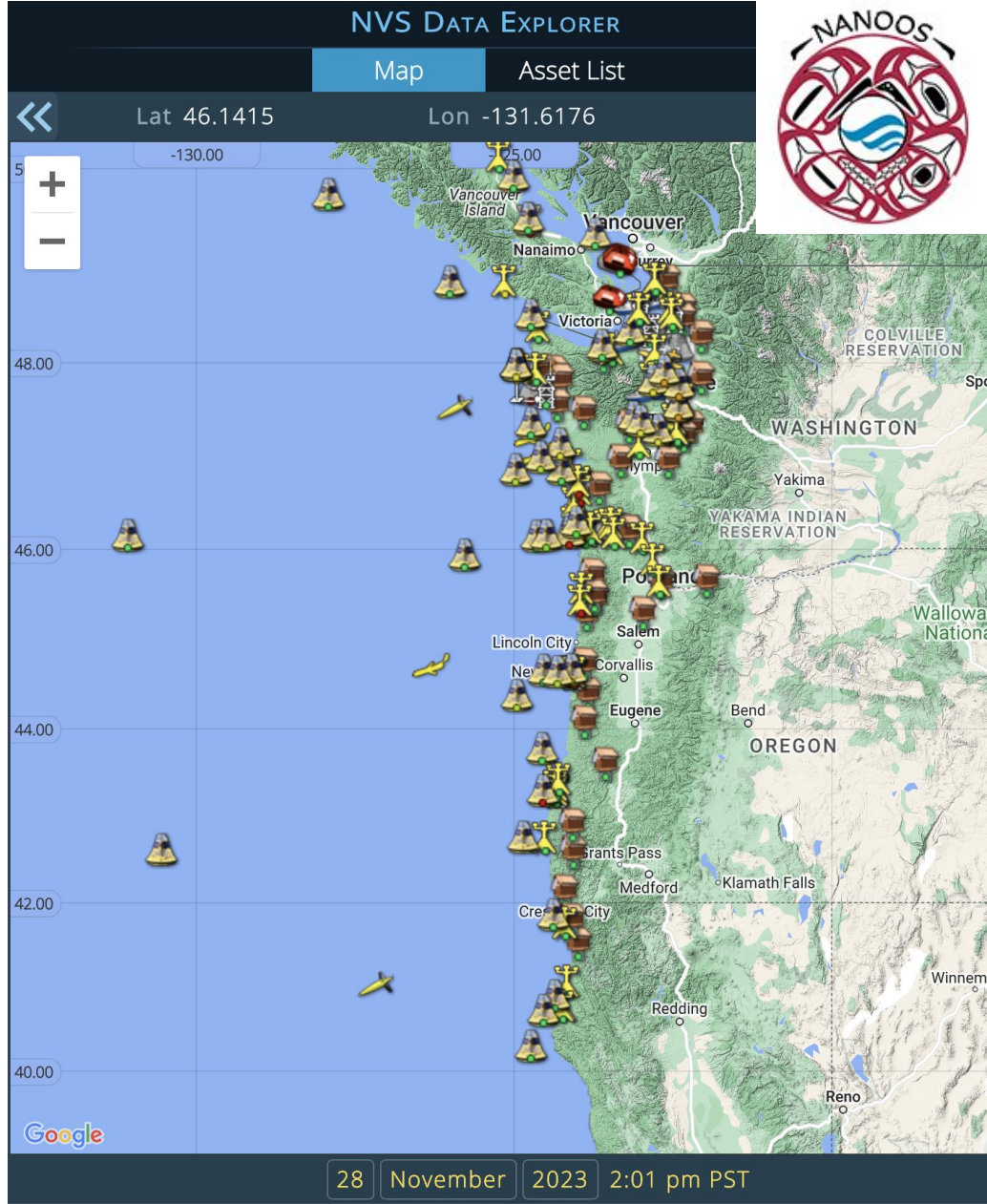
“simplified” Northwest Atlantic food-web

What might that science look like?

What are the climate drivers and ecological impacts of hypoxia, and their time of emergence from background variability? -me

*Listen, where can I go where the crabs aren't dead? –Brian Reeves
(Sportsmen's Cannery)*

Surely we know that....



...but we actually have poor coverage



...and geography is expensive



\$35k/day



\$6k/day



\$4k/day

Couldn't we crowd source hypoxia detection and tracking?

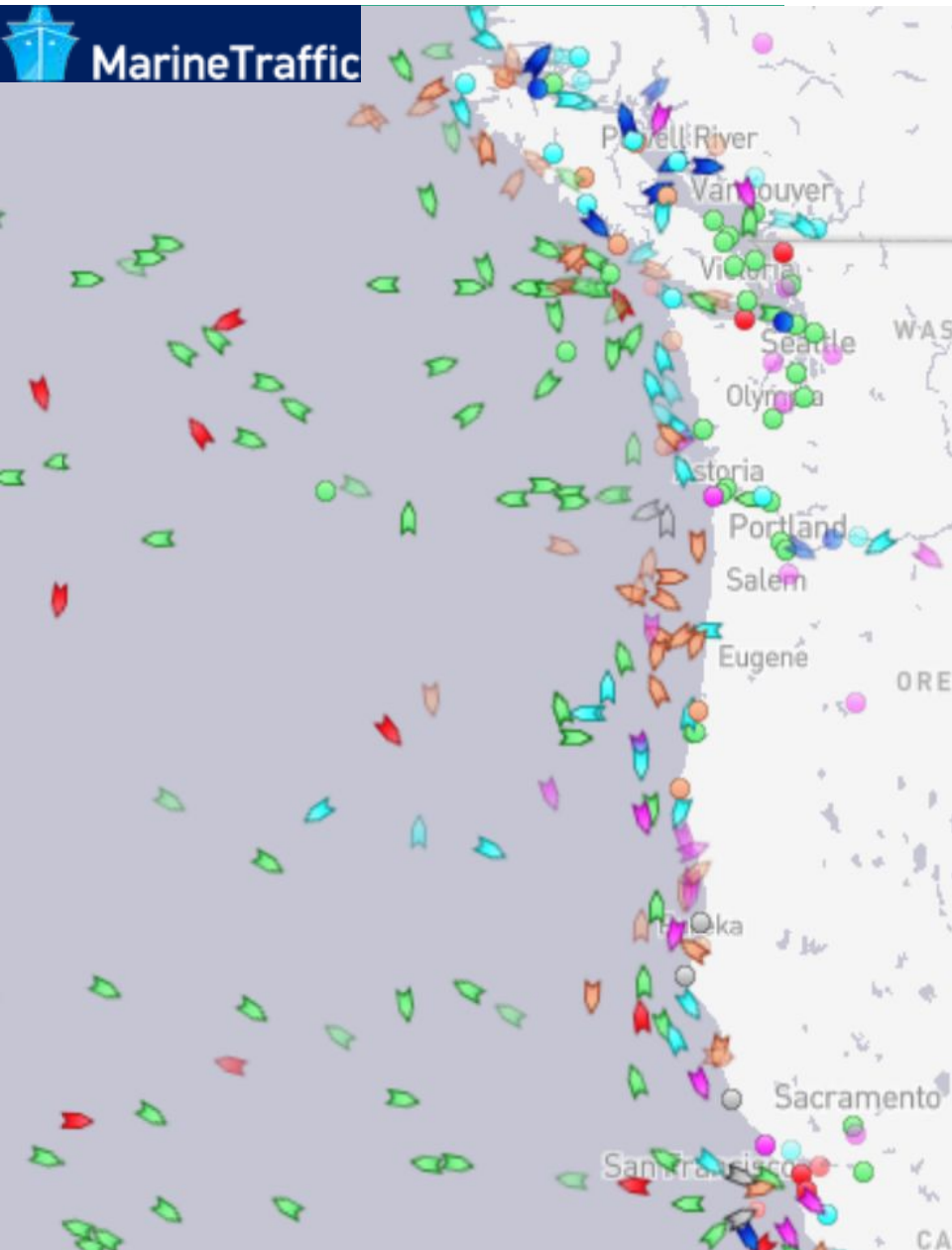
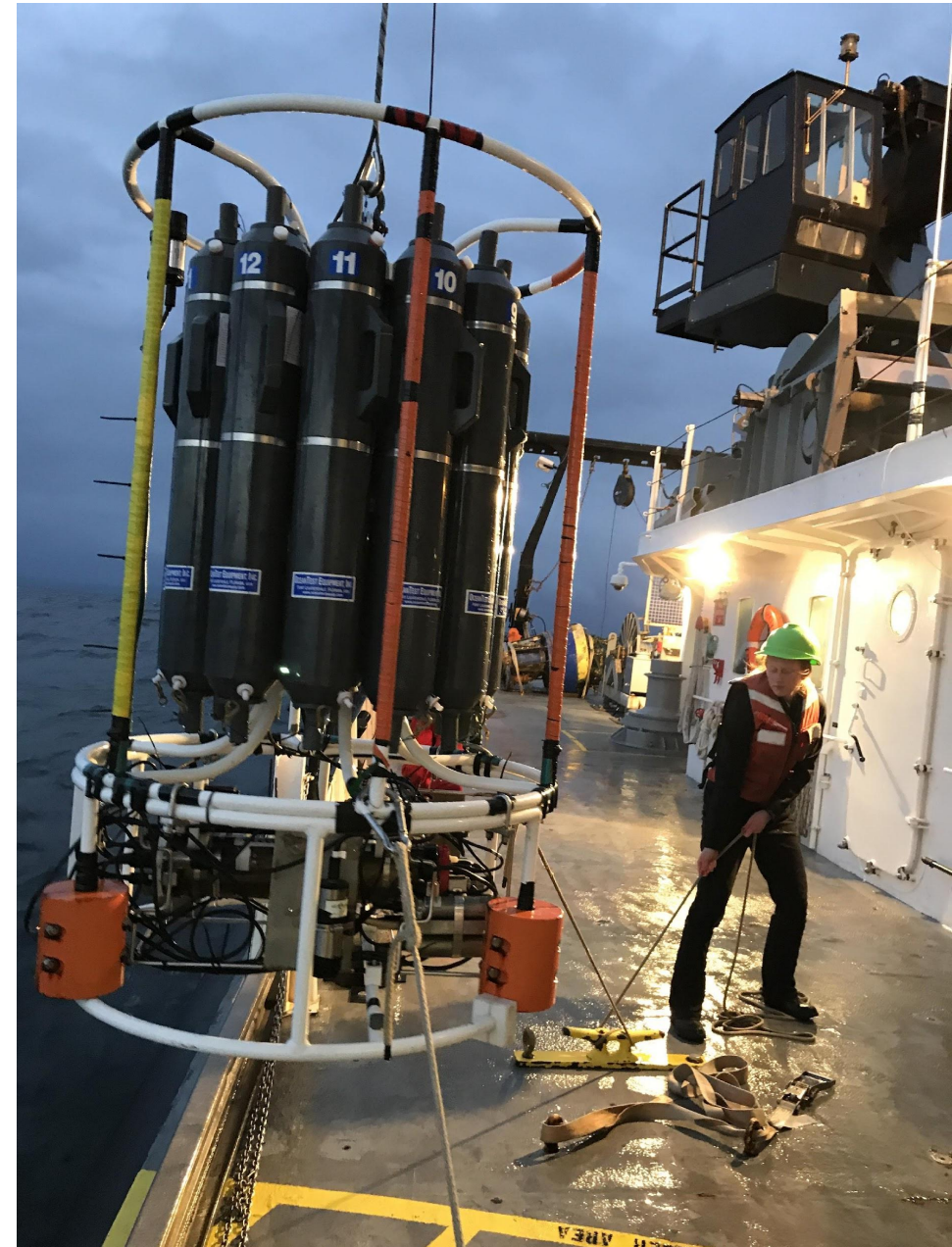
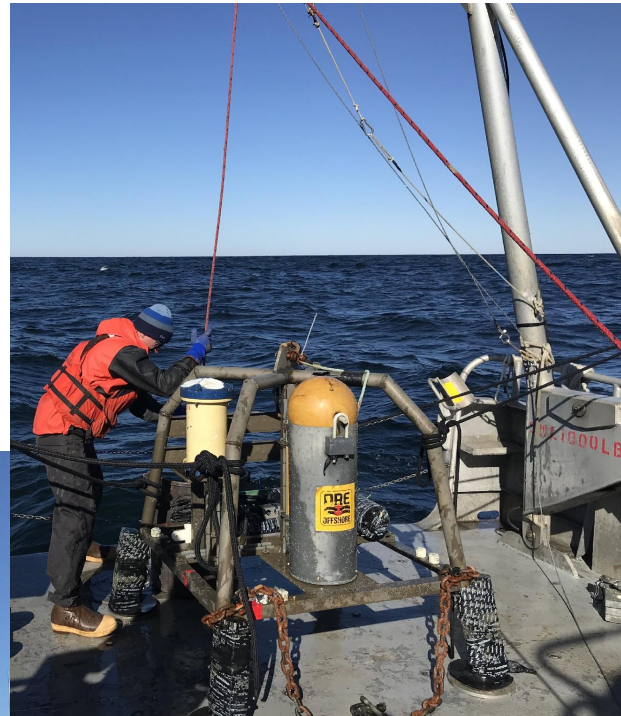


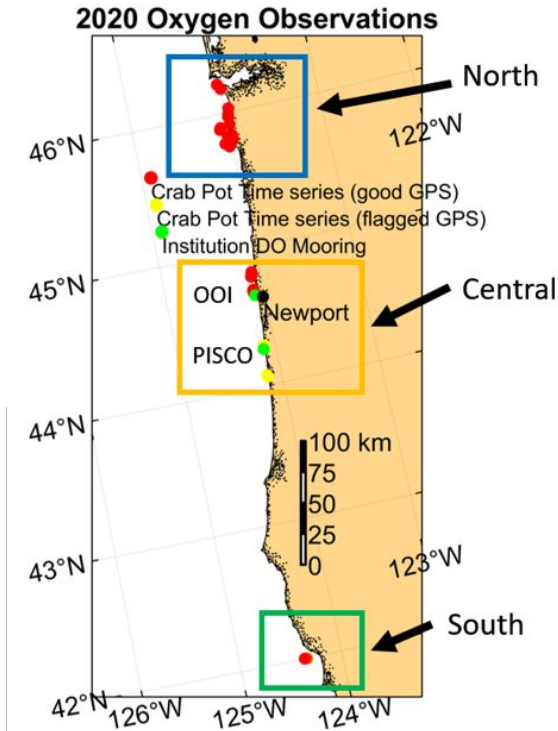
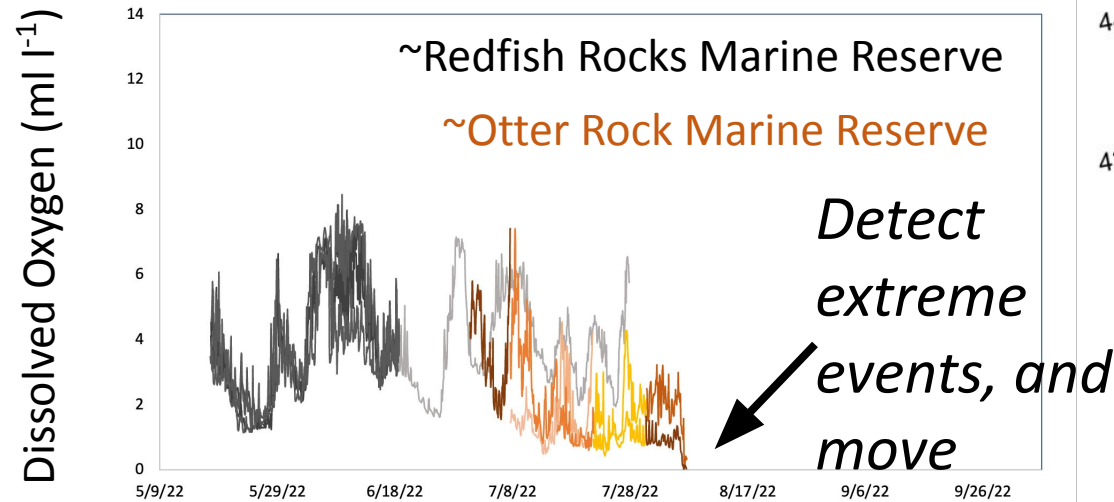
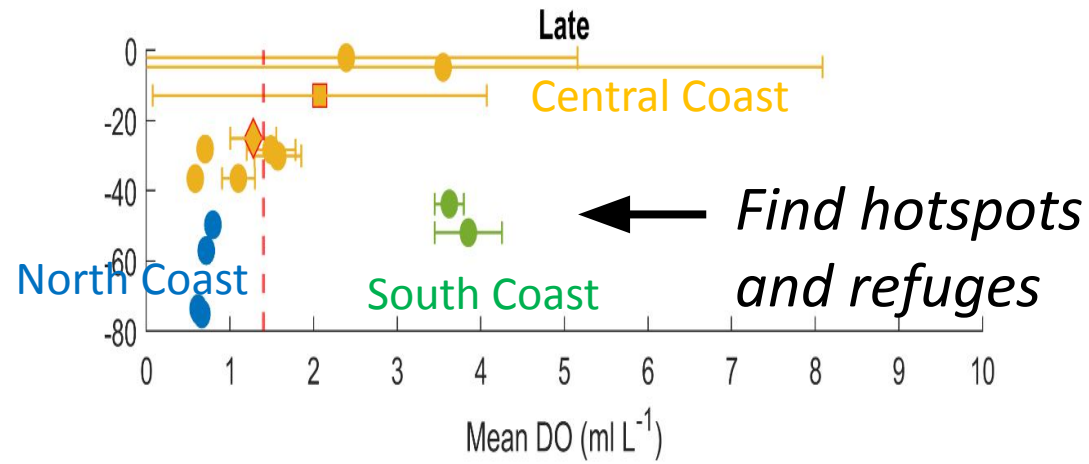
Photo: Carol Leigh

Sure, we just need to give people one of these ...





What if we could make a cheaper, smarter, tougher sensor that fishermen can deploy?



With Jack Barth, Linus Stoltz, Will White, Kipp Shearman, Haley Hudson (OSU), and Jeremy Childress



BTW, be prepare for collaborative science to evolve...



Photo: Haley Hudson

Program initially ■ ■ ■ ■ ► Program now

How

A research/researcher-dependent tool

An operational/commercial product

Who

Advisory Board with only agency scientists

Advisory Board of mostly commercial and tribal representatives

What

Climate, fisheries, and climate adaptation research

+ Co-management and treaty rights support



Jessica Garwood

Are we up for this?



Molluscan Broodstock Program -Chris Langdon (College of Agricultural Sciences)



“Burk-o-lator” –Burke Hales (College of Earth, Ocean, and Atmosphere Sciences)



Bycatch reduction and conservation engineering –Waldo Wakefield (CIMERS)



Advancing a marine climate insurance –James Watson (College of Earth, Ocean, and Atmosphere Sciences)



Integrating social preference research in climate solutions –Hilary Boudet (College of Liberal Arts)



Applying state of the art pandemic mathematical tools for climate-ready fisheries science–Katie McLaughlin (College of Science)

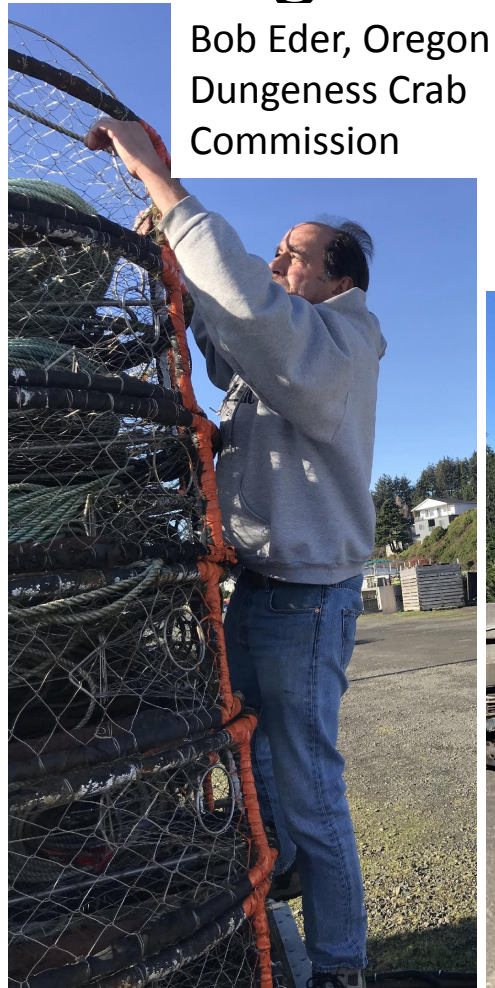
Do we have the pieces here in Oregon?



Laurie and Jensen Huang
Collaborative Innovation Complex



HMSC Innovation Lab



Bob Eder, Oregon
Dungeness Crab
Commission

Brad Bailey, On-Nee
Sea Ranch



Liu Xin, Oregon
Oyster Farms



Do we have to do this?

- Will we be just as good at measuring the right things, in the right places, and in ways that will be useful to people?*
- Will we come up with just as good climate adaptation solutions that will make a difference?*

Acknowledgements

Industry, Tribal, and Agency Partners:

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Bernie Lindley (F/V Sea Jay)

Greg Niles (All Depth Charters)

John Terabesi (F/V Lady Louise)

Aaron Ashdown (F/V Misty)

Jennifer Hagen (Quileute Tribe)

Mike McHugh (The Tulalip Tribe)

Lucas Rabins (The Tulalip Tribe)

Katelyn Bosley (WDFW)

OSU partners:

Jack Barth

Jessica Garwood

Linus Stoltz

Haley Hudson

Will White

Kipp Shearman

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Sexton Corp.

Lowell Instruments