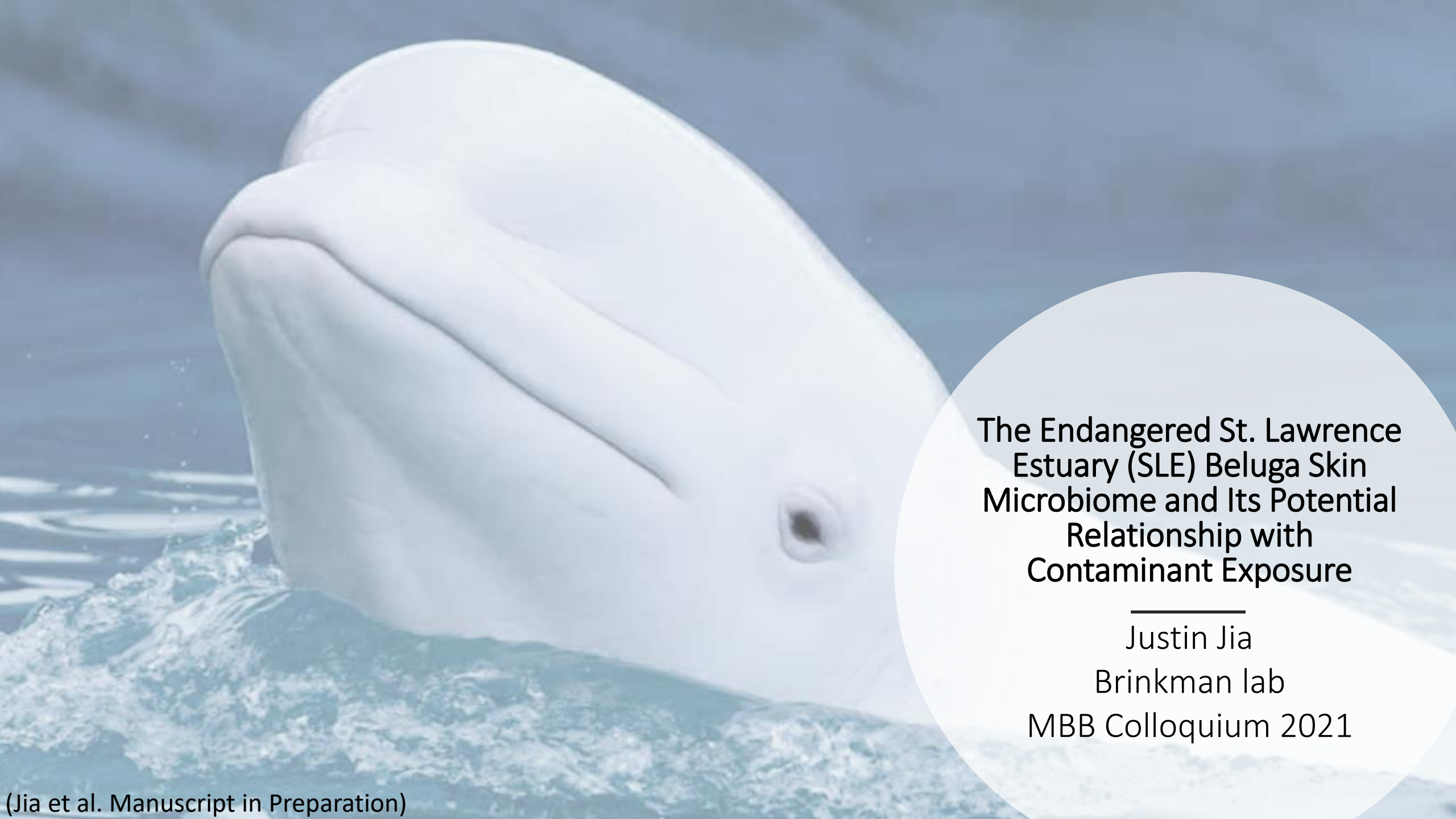

# The Endangered St. Lawrence Estuary (SLE) Beluga Skin Microbiome and Its Potential Relationship with Contaminant Exposure

Justin Jia
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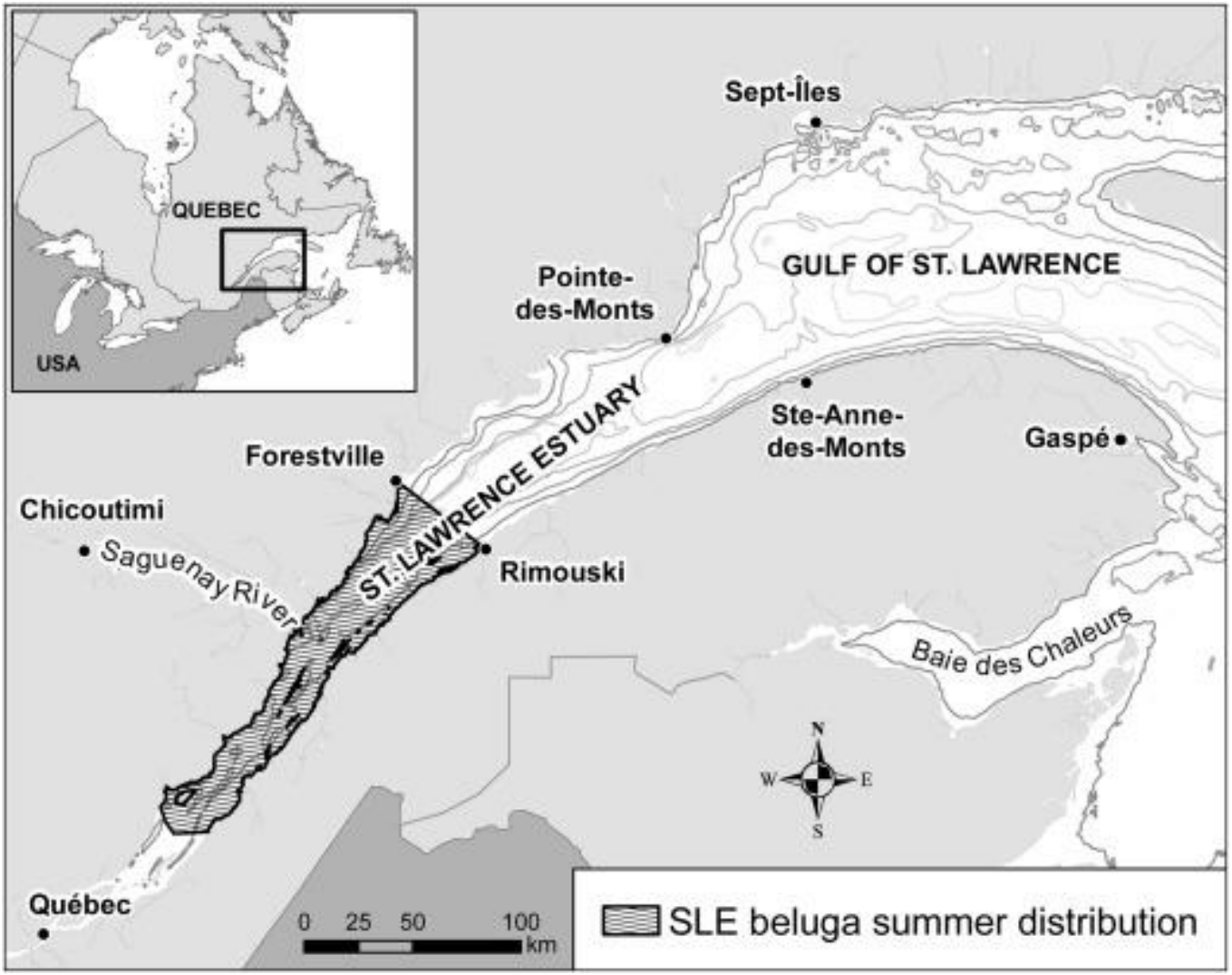
MBB Colloquium 2021

(Jia et al. Manuscript in Preparation)

# Environmental Contaminants in St. Lawrence Estuary → Belugas on the Road to Extinction




## Rationale:

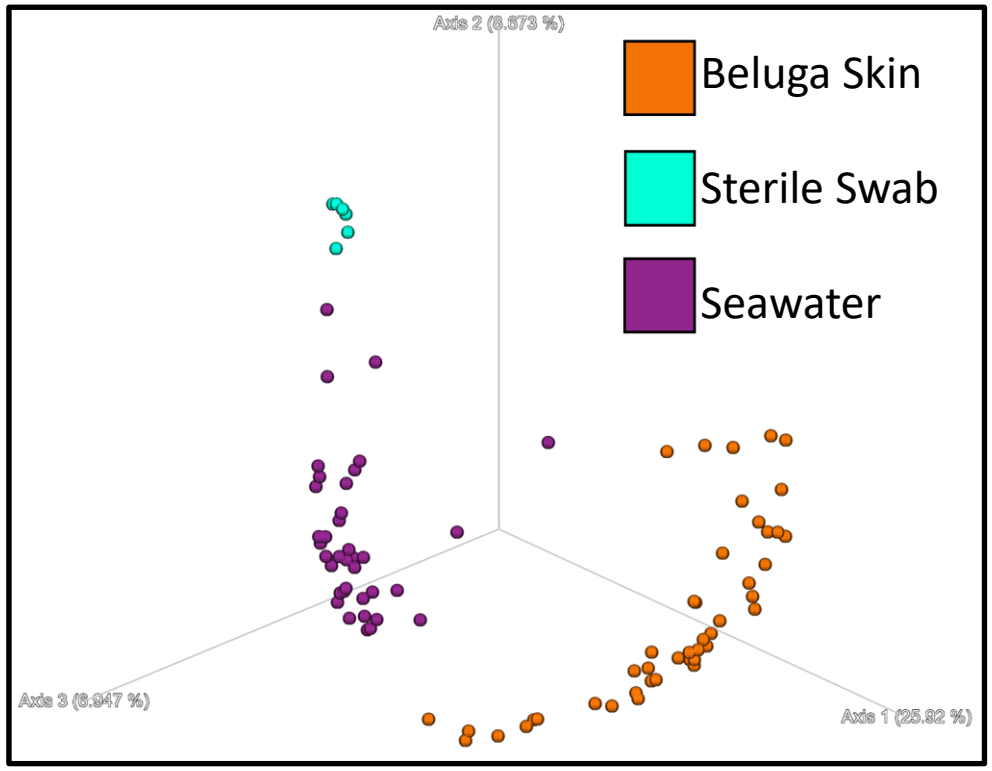
Current contaminant monitoring relies on invasive beluga skin biopsies

Can we use the beluga skin microbiome instead?

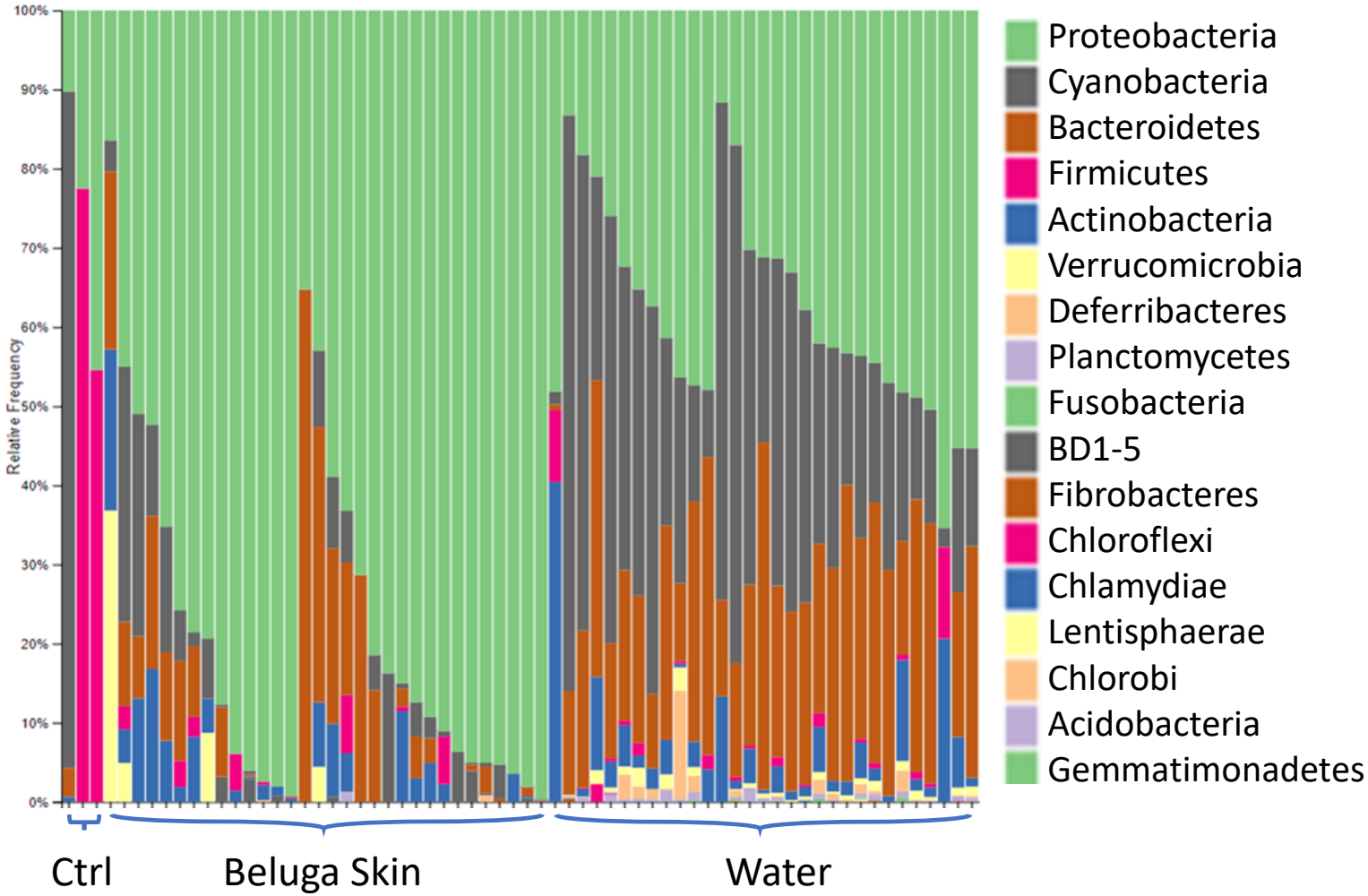
## Hypothesis:

The beluga skin microbiome changes as a function of beluga tissue contaminant concentrations, and can be used for less invasive swab-based monitoring of animal health

# The Beluga Skin Microbiome is Distinct From the Seawater Microbiome

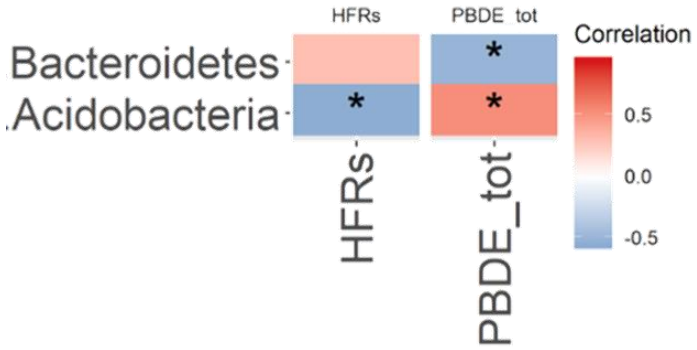



PCoA Plot of Sample Microbiomes



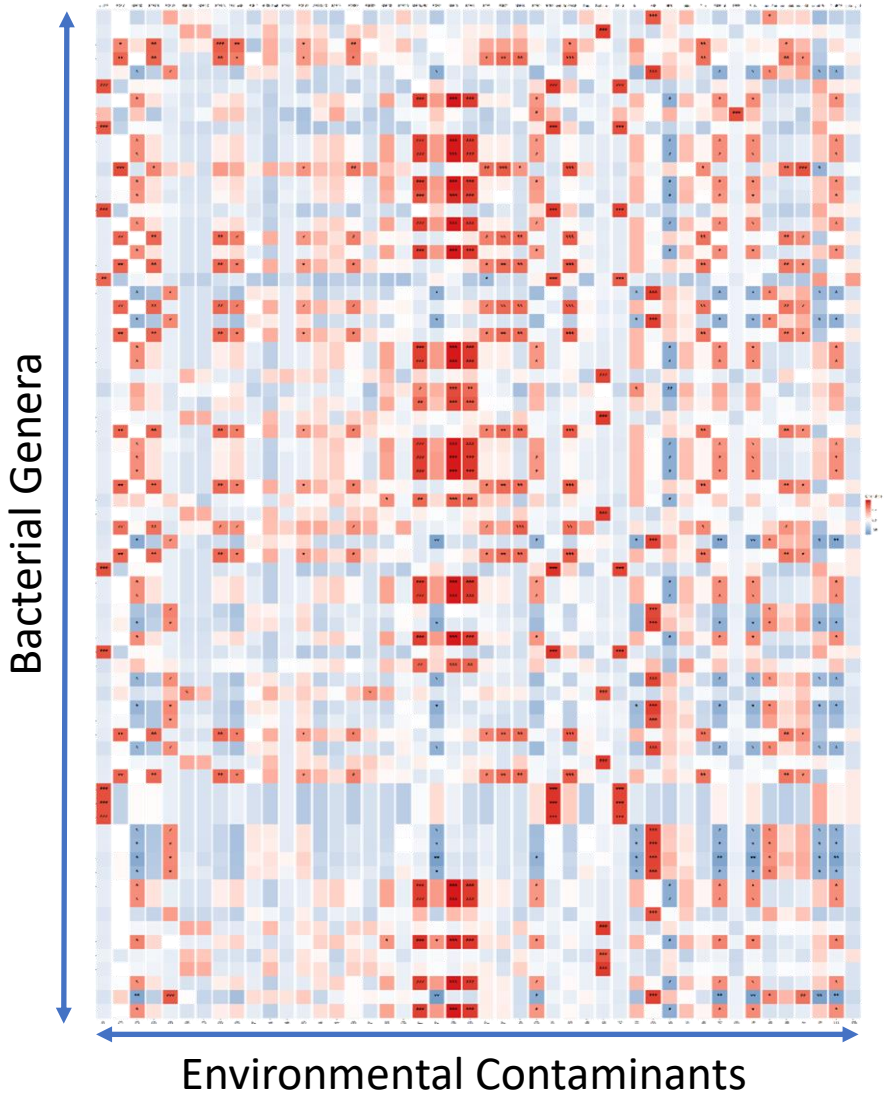
# Beluga Skin Microbiome Changes Correlate with Some Contaminant Levels

Potential Phyla Biomarkers For All Contaminants




Pearson correlation of taxa abundance (y-axis) and blubber contaminant concentration (x-axis), with correction for multiple testing

Potential Genera Biomarkers For Individual Contaminants




## Significance:

Potential utility of the beluga skin microbiome for non-invasive monitoring of contaminant exposure that warrants further study.

# Thank You!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