

# Microbial Manifold

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# Deep Sea Microbiology By the Numbers

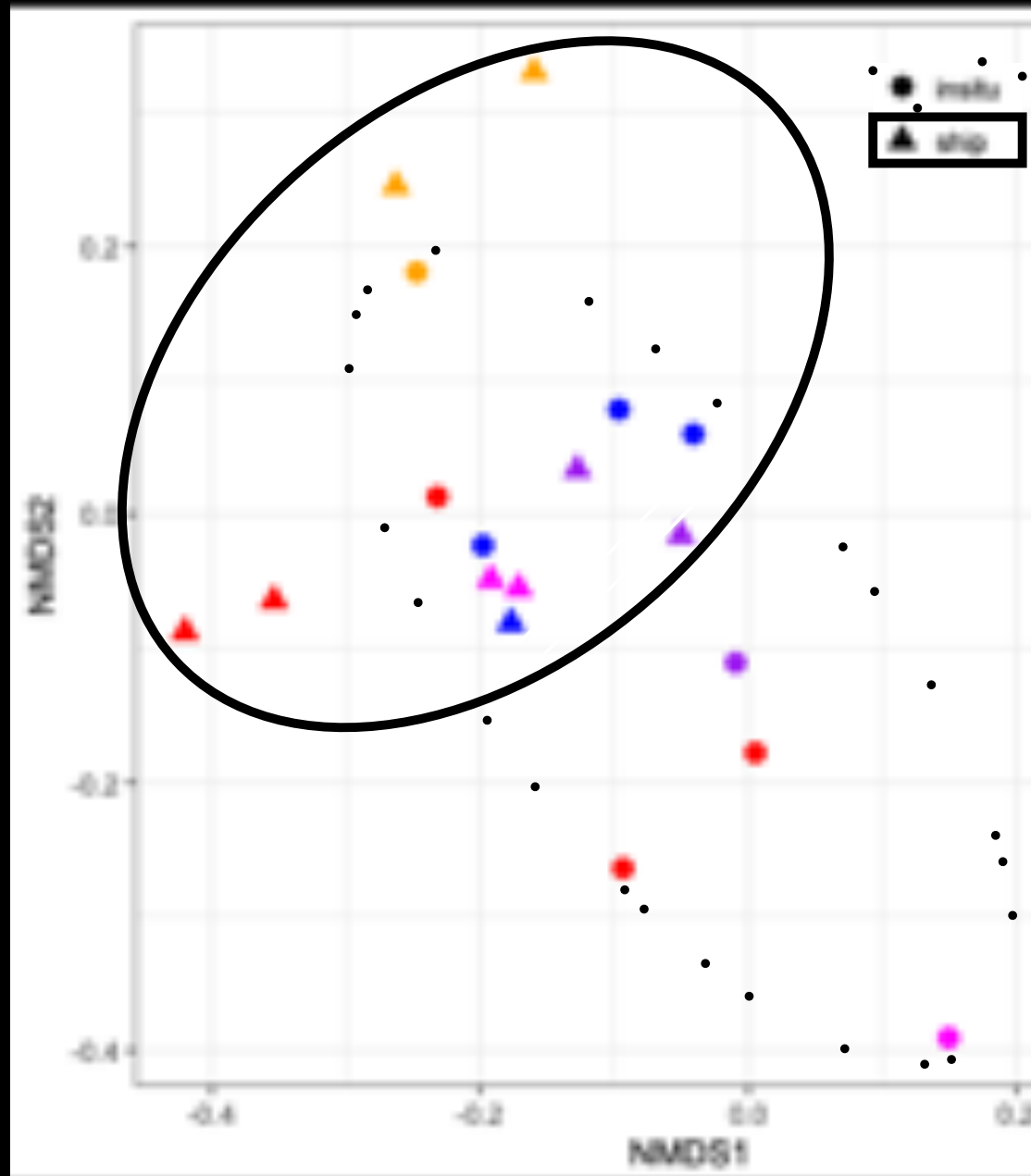
Source	org/ml	g DNA/org	L needed
Bacteria ocean	1.00E+06	1.00E-15	0.02
High Bacteria vents	1.00E+05	1.00E-15	0.2
Low Bacteria vents	1.00E+04	1.00E-15	2
High Viruses vents	1.00E+06	1.00E-17	2
Low Viruses vents	1.00E+05	1.00E-17	20

**10 ml of ocean bacteria in  
10 L of low vent fluid,  
10% total DNA contaminated**

**Volume needs:  
2-20 L fluid  
per sample**

**Purity needs:  
Purge capability,  
source Temperature tracking**

# The case for *in situ* filtration



***In situ* capability:  
critical to  
capturing accurate  
snap shots of life  
on and in the  
seafloor.**

# Potential Users

- Any science questions supported by **geochemical** and **microbiological** observations
- 3rd party equipment - aid in malfunction/repair **reducing lost dive time**
- New users - proposals **driven by science not access**, preventing requirement to find pre-existing tools/berth space to work in new area/propose a cruise using fluids
- Current users - **broadening the toolbox** by offering targeting fluid collection to all NDSF users.

# Microbial Manifold

## Fluid sampling and filtration is a:

- Cross-disciplinary, core need, for deep sea research
- Unmet by current NDSF capabilities.

## Proposed solution:

- Shared resource
  - Does not live in individual labs with specialized expertise required for use.
- NDSF managed
- Compatible with NDSF pumps, ROV, and HOV systems.
- Science supplied water collectors/filter holders
- Cost 5k to 15k per unit depending on design

