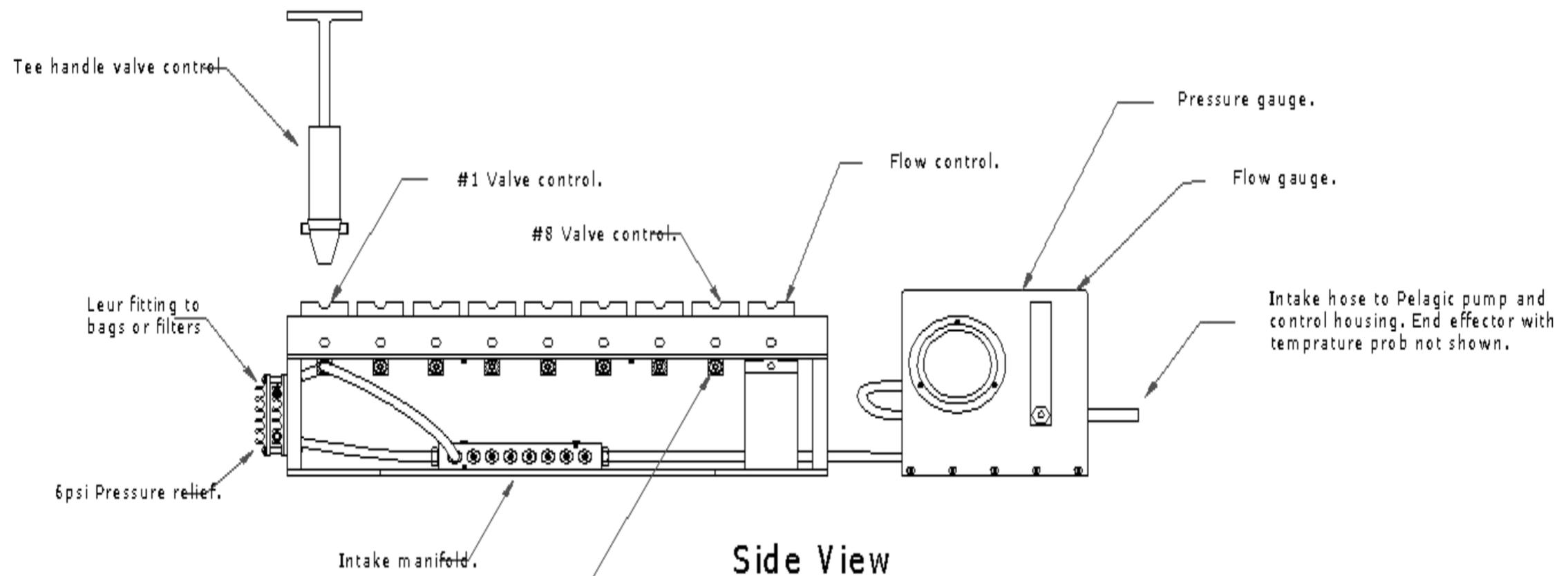


# Universal Fluid Obtainer (UFO)

Rika Anderson - Carleton College  
Elizabeth Trembath-Reichert – ASU  
Designed by Andy Billings (Jason group)

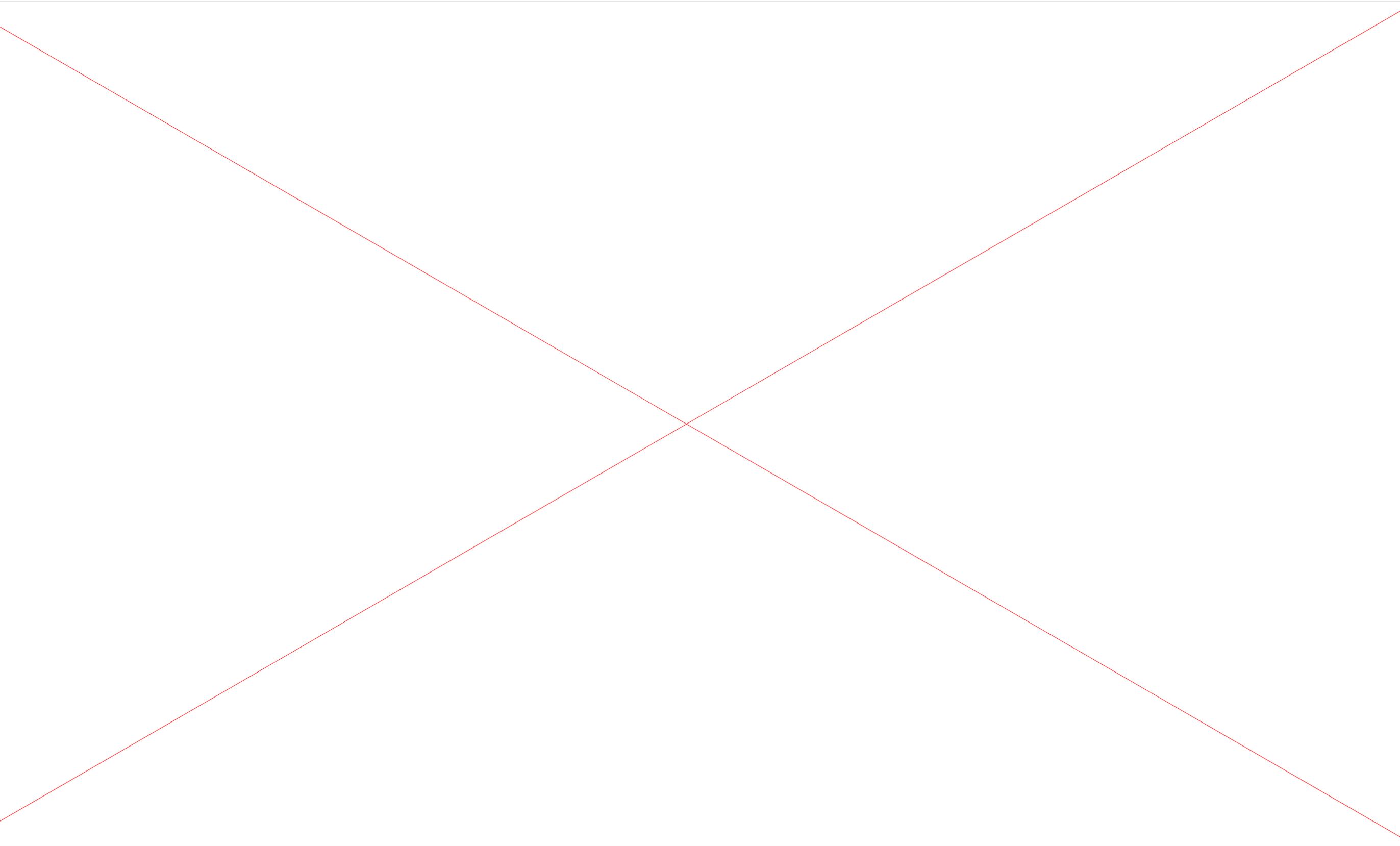


# Motivations for a community fluid sampler

- Fluid samplers are usually owned and maintained in the labs of **individual PIs**
- **Barrier to entry** for early career scientists, scientists without their own samplers
- Requires **re-testing** each sampler for compliance with NDSF regulations/compatibility with vehicles

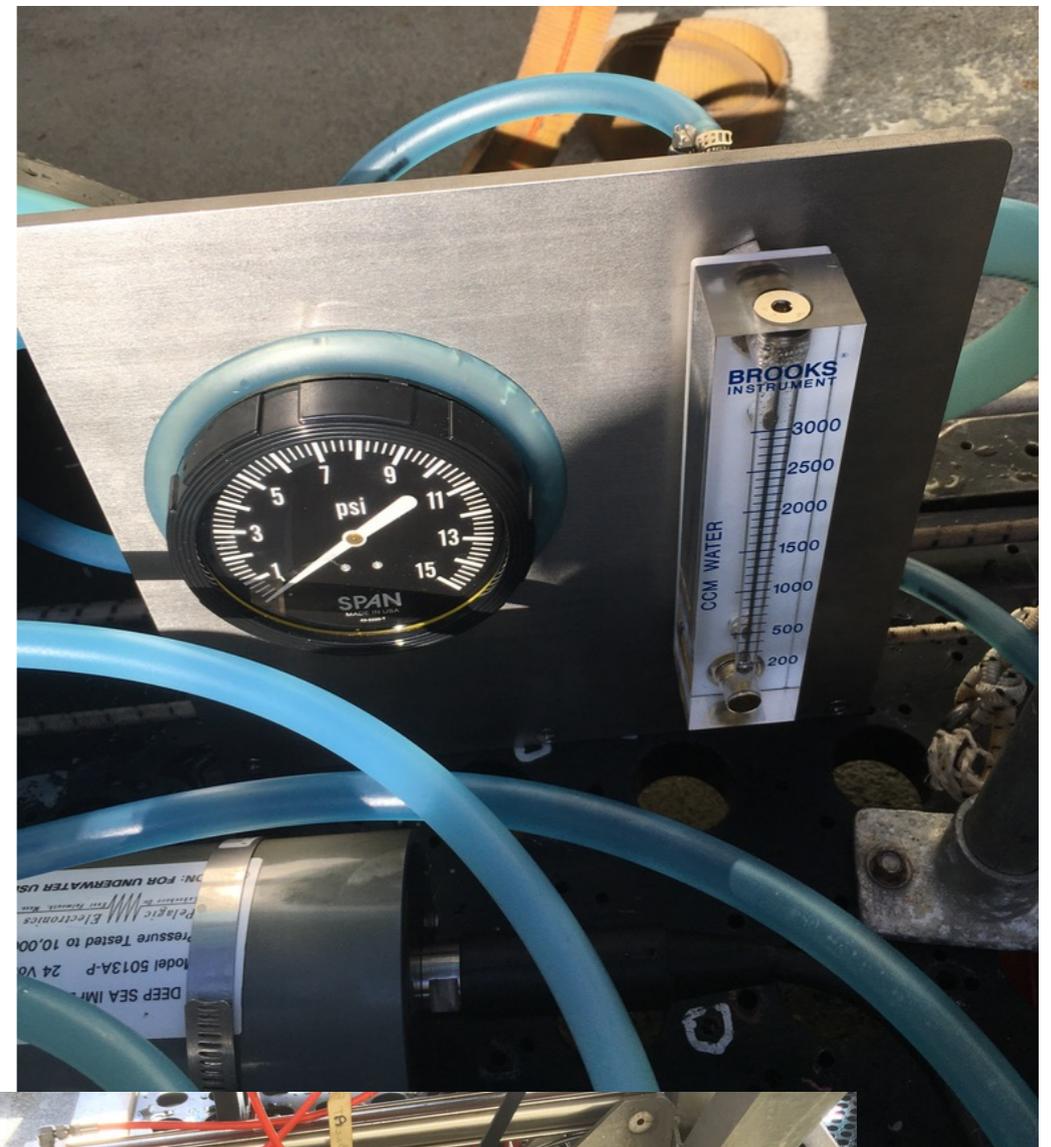
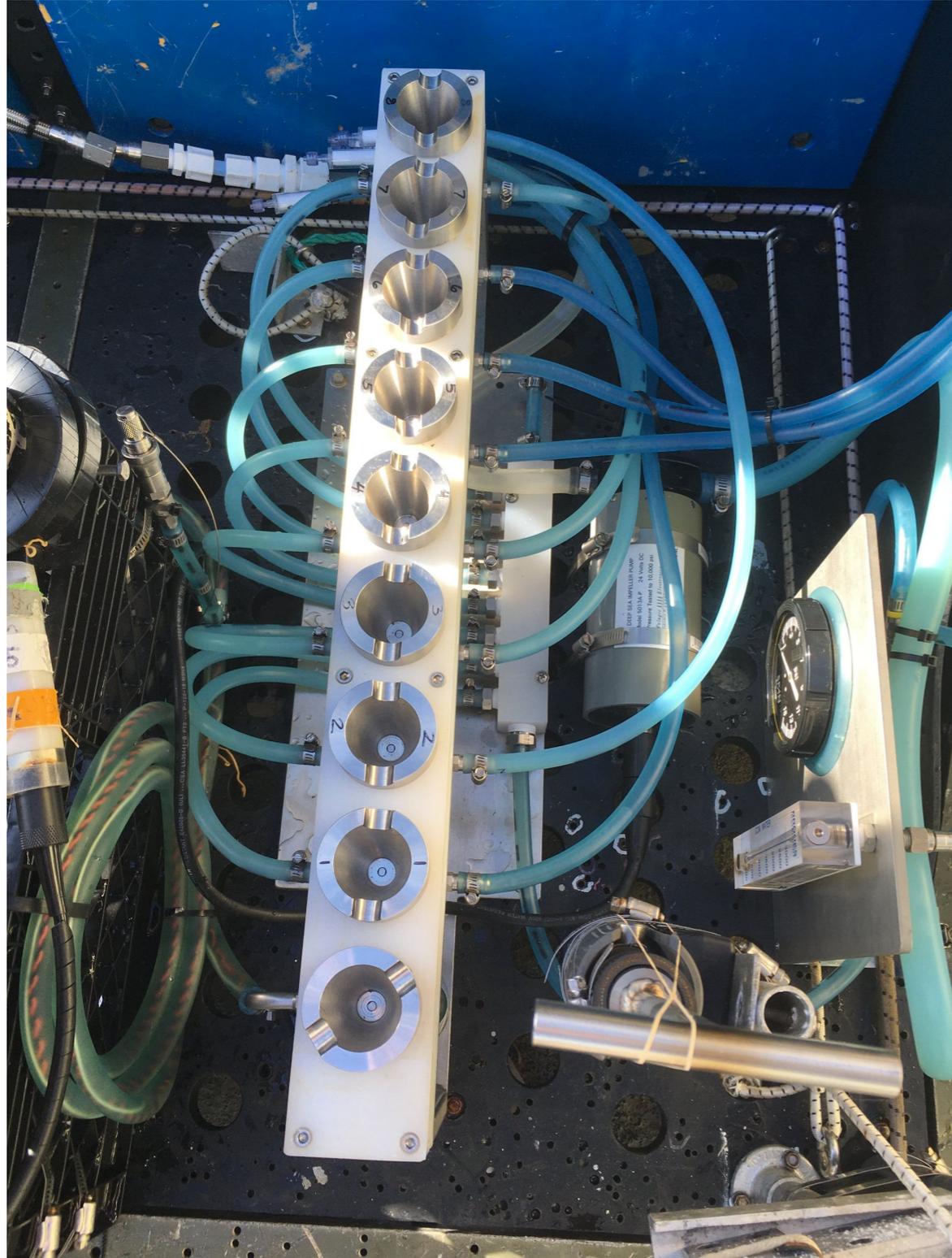
**Goal:** Develop a **community fluid sampler** with NDSF engineers to meet community needs for fluid sampling, while remaining simple and adaptable to prevent a high maintenance burden

# Sampler Schematic



# Updates

Successful testing at 4950m depth  
(Piccard hydrothermal field,  
Mid-Cayman Rise) with ROV Jason



# Updates

- Have solicited feedback from the community (C-DEBI, AGU, etc.)
- Have discussed design ideas with other fluid sampler designers
- Other scientists will be including it in proposals this year

## Next steps:

- Needs to be easily searchable: NDSF resources website?
- Finish user manual
- Possible design tweaks after testing and feedback:
  - Bag chambers that are evacuated.
  - Switch some stainless parts to aluminum to reduce weight.
  - Two metering peristaltic pumps that can push and pull.
  - Repair and integration of the Varnum samplers.
  - Manifolds for easier integration.
  - A bespoke TI pressure housing that allows control of multiple pumps.