



# Next Steps in 2022 Smith Lab - VIMS

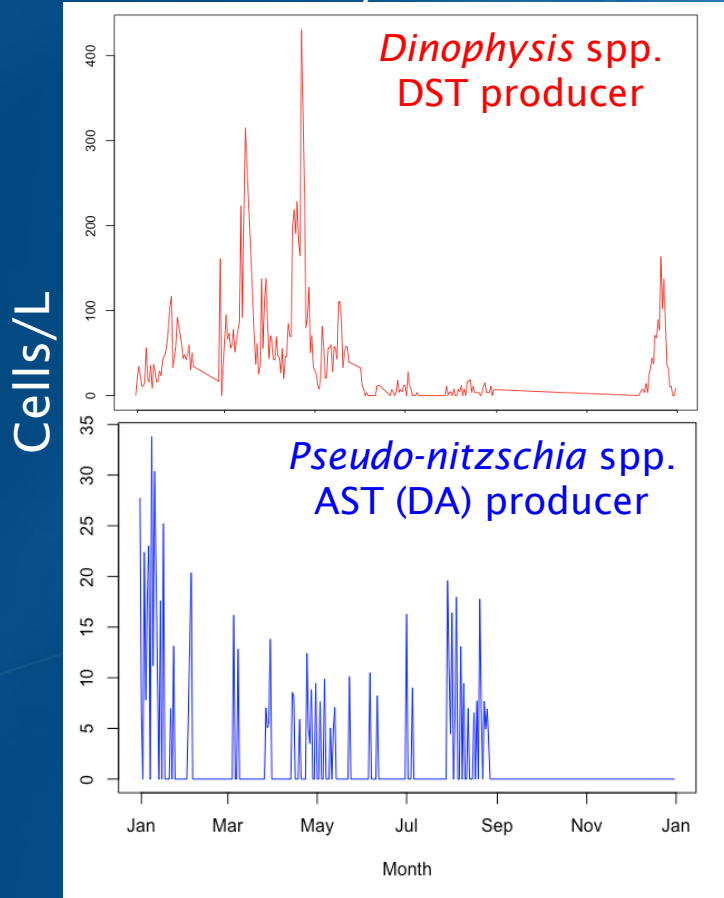


- IFCB HAB Monitoring, VIMS Pier, York River, VA
- Modified SPATT construction protocol

Juliette L. Smith  
Associate Professor  
jlsmith@vims.edu  
Virginia Institute of Marine Science  
William & Mary

# IFCB HAB monitoring

2021 Mean daily cell concentration



I. Wade Huang  
Postdoc Fellow (US FDA)



Marta Sanderson  
Marine Scientist



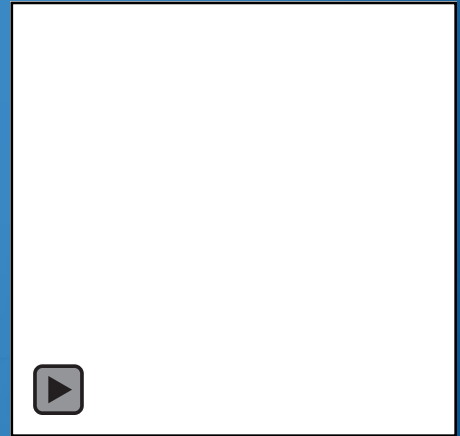
Vanessa Strohm  
Master's Student

Updates:

- IFCB deployed subsurface 2022 + 2023, with focus on Oct – June (ECOHAB *Dinophysis*)
- Random forest (RF) & convolutional neural network (CNN)
- Currently 114 classes in CNN
- Adjusting code to display max cells/L/d
- **New data sharing platform coming soon...**

# IFCB Troubleshooting

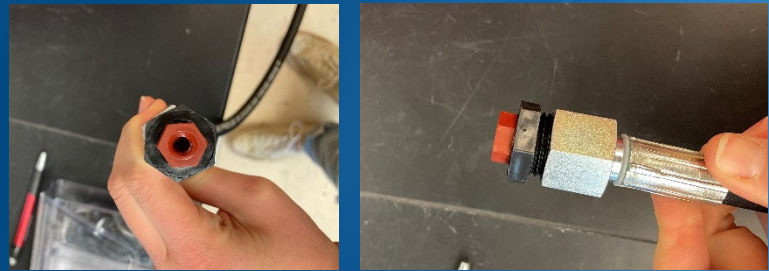
- Troubleshooting document for circulation
- External biofouling
- Internal biofouling
  - Sediment
  - Syringe backing out/failing
  - Over-pressurization
- Bubbles and empty cartridges, leaks
  - Pressure tester



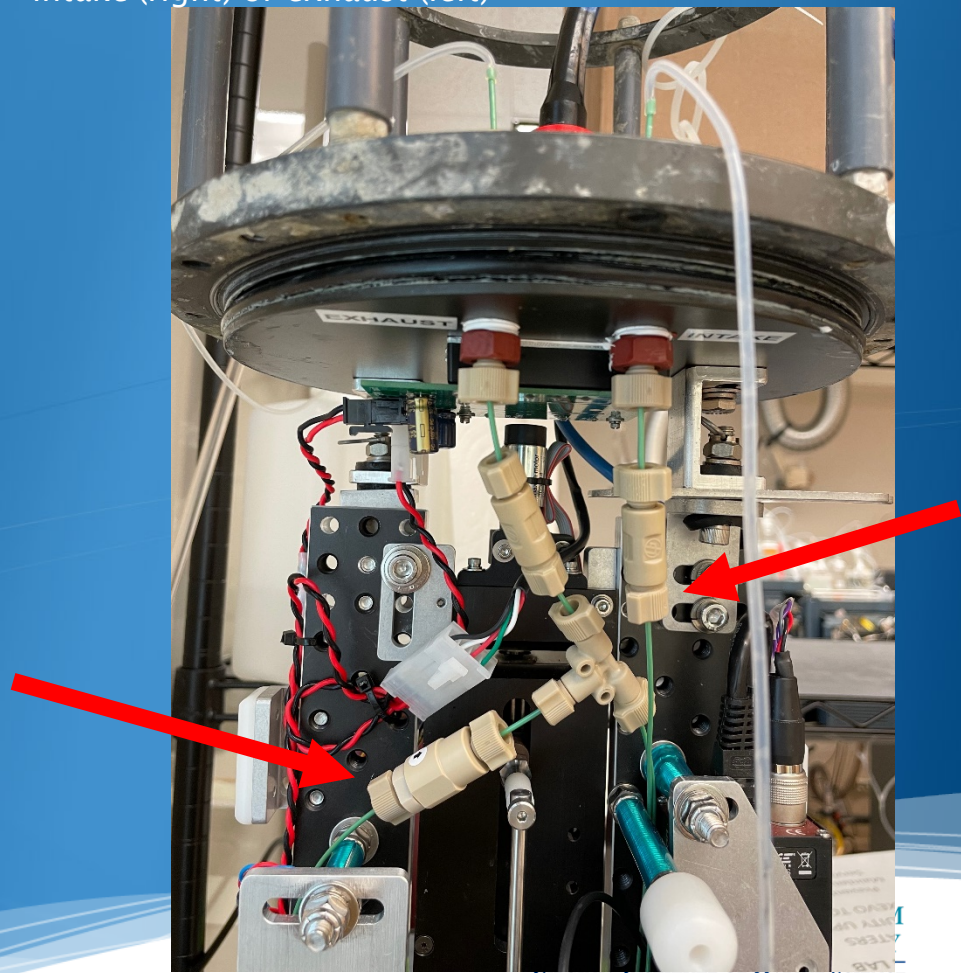
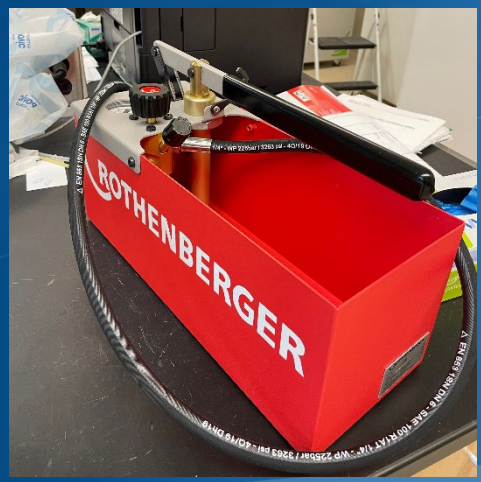


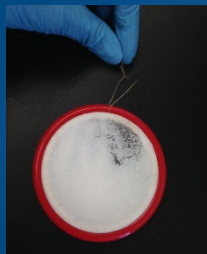
Locations on IFCB to connect pressure tester to pressurize from intake (right) or exhaust (left)

Adapter that attaches to end of pressure tester line



Pressure tester





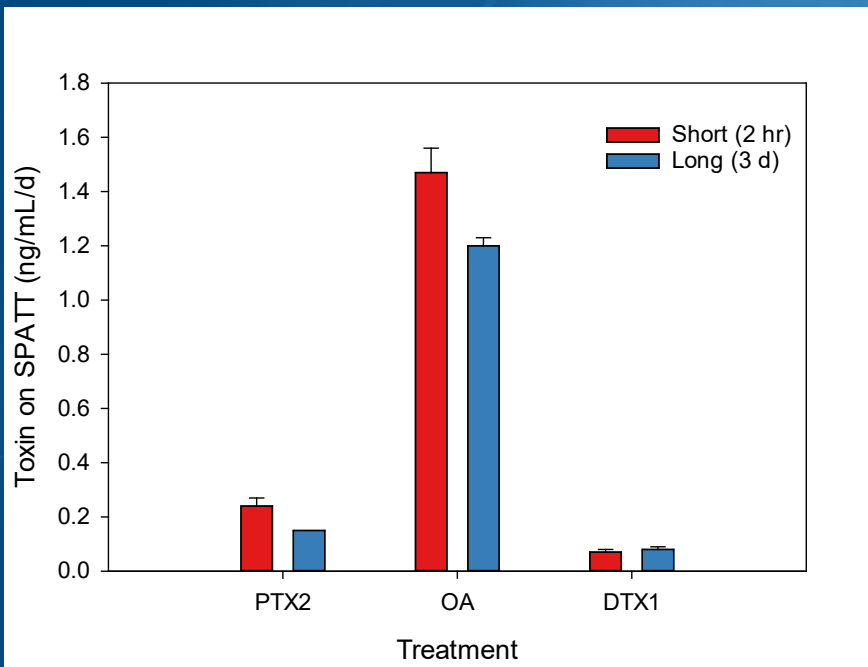
**Nour Ayache**  
Assist. Research Sci.

# SPATT Construction Protocol



**Josh Garber**  
Graduate Student

## Toxin on SPATT after 14-d deployment



Goal: Determine if SPATT construction protocol could be shortened from 3 days to 2 hours.

- Triplicate flasks made by both methods
  - 15 min vs. 18 hr in MeOH or H<sub>2</sub>O
- Deployed for 14 days off VIMS Pier, York River
- Preliminary Results: Shorter protocol just as effective at preparing resin to bind toxins over 14 d (*more toxins, capacity, stability, kinetics*)
- **New protocol coming soon...**