

# RU-COOL Autonomous Underwater Gliders



Joe Gradone

[jgradone@marine.rutgers.edu](mailto:jgradone@marine.rutgers.edu)

Rutgers University Center for Ocean Observing Leadership (RU-COOL)

Department of Marine and Coastal Sciences (DMCS)

School of Environmental and Biological Sciences (SEBS)

[rucool.marine.rutgers.edu](http://rucool.marine.rutgers.edu)

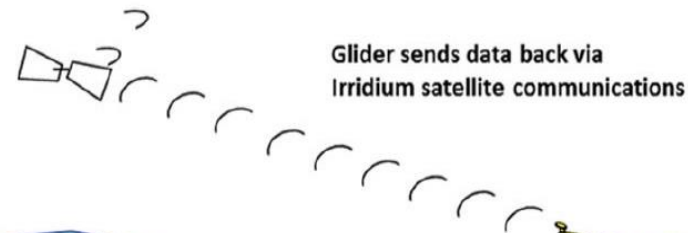
**Representing:**

Oscar Schofield, Scott Glenn,  
Josh Kohut, Grace Saba,  
Travis Miles & many more

## How can AI improve autonomous control and allow us to sample the ocean better?

### Operational Specs:

- 30 meters to 1,000 meters
- From several weeks up to approx. one year
- “Dead-reckons” while underwater (i.e. no GPS)
- Temperature and salinity are standard
- Configurable for *many* additional sensors



Glider deployed by ship

Glider senses surface, adjusts ballast pump to dive

Glider dives by Adjusting ballast pump

Glider senses bottom, adjust ballast pump to ascend

Glider ascends

Glider descends

Surface timer goes off, glider Makes its way To surface

Broadbent et al. (2024)

### RU-COOL Glider Fleet Totals

Total Deployments

717

Active Deployments

3 ↗

Distance Flown

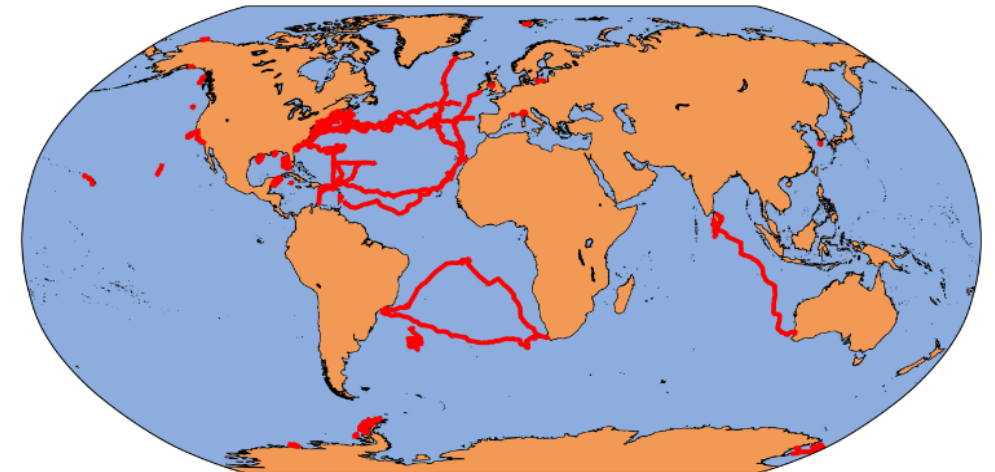
379,403 km

(9+ times around the earth)

Glider Days

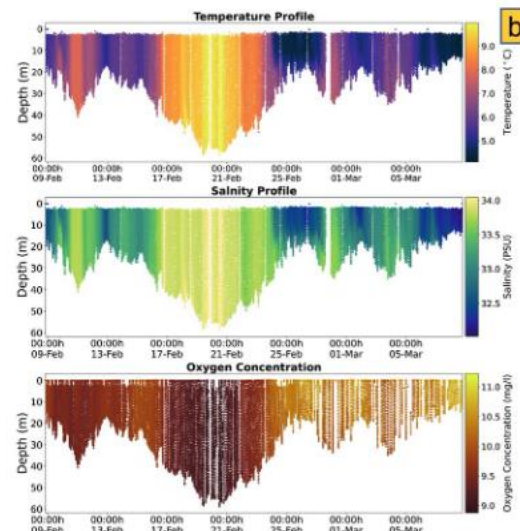
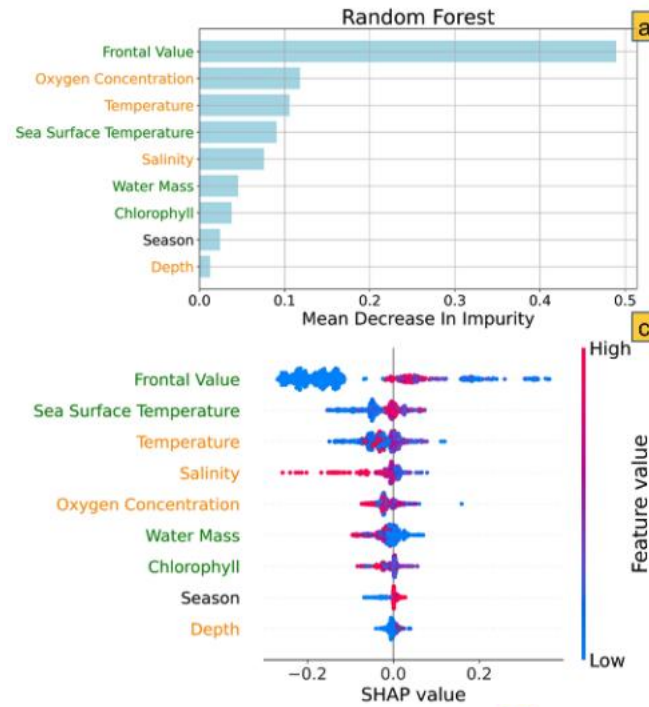
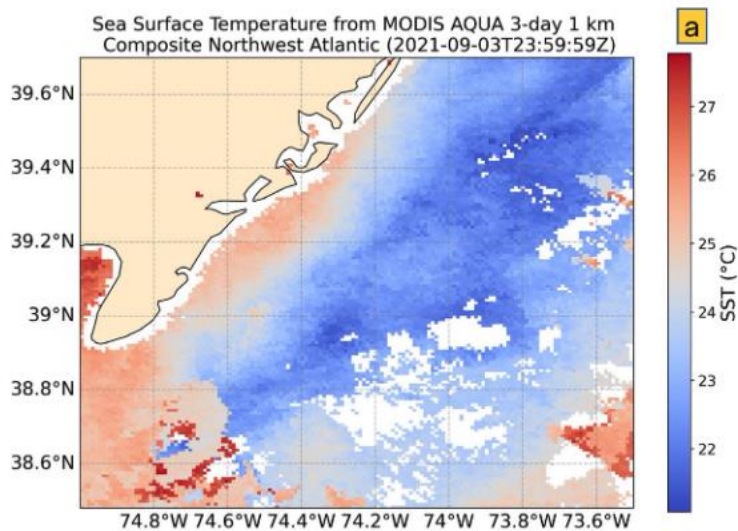
19,612 days

(54+ years)



## How can machine learning with “big ocean data” unlock new scientific findings?

- Detection, One example →
- Pattern recognition
- Understanding of difficult-to-observe physical processes
  - Turbulence!



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