Summary of North Pacific working group:

Two experiments:

1. Effect of lateral eddy flux on carbon flux in the subpolar gyre.

2. Quantifying the role of biology in the drawdown of CO$_2$ at the subtropical-subpolar boundary in the North Pacific.
Effect of lateral eddy flux on carbon flux in the subpolar gyre:

Eddies are predictable and coherent $O(2 \text{ years})$.

Insert macro and micronutrients to the NP sub-polar gyre.

Infrastructure:
Seed eddies if $O(3)$ profiling floats and sample horizontal and vertical context with 2 gliders

Sample of O2, N2, Particles, physics.
2. WHAT IS THE BIOLOGICAL CONTRIBUTION TO THE INTESE pCO$_2$ DRAW-DOWN AT THE PACIFIC SUBARCTIC-SUBTROPICAL BOUNDARY?

A proposed pilot project to study upper ocean oxygen production OCB
Float-Glider Workshop April 2009 Steve Emerson and friends

Mean Annual Air-Sea Flux for 2000
Taro Takahashi data base, www.ldeo.columbia.edu
SEASONALITY IS VERY IMPORTANT

Ocean Color - Summer

Ocean Color - Winter

ΔpCO₂ - Summer

ΔpCO₂ - Winter
IF WE PUT ARGO FLOATS INTO THE OCEAN IN THE WESTERN PACIFIC AT THE GYRE BOUNDARY WHERE DO THEY GO?
COLLABORATIONS: THE JAPANESE PACIFIC CARBON PROGRAM

Toshiro Saino (Personal communication)

Two Time Series Stations: K2 and S1

Mirai Cruises Between them:
Feb, Nov 2010; Feb, Apr, July 2011
Infrastructure:

20 floats: CTD, O2, ISUS/SUVA, FLNTU+CDOM (!?). Released in batches of 5 along a N-S section.

4 gliders – cross the Koroshio (3 degrees, one crossing every two weeks). CTD, O2 & FLNTU.

Calibration/cross-calibration is crucial.

Released using ships of opportunity.
Already funded efforts:

Ken and Steve: experiment with 6 floats in PAPA region. Boss (+Westberry): 1 float in PAPA (O2+FLNTU).