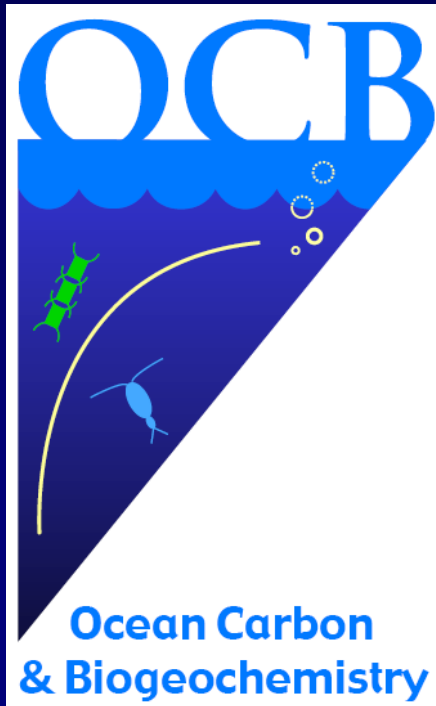
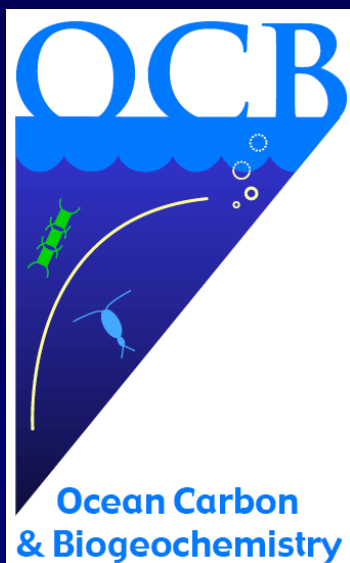




US OCB Interests and Needs

Debbie Bronk, Steve Emerson, Craig Carlson,
Ken Johnson, Dennis McGillicuddy,
and Chris Sabine



Purpose:

To promote, plan, and coordinate collaborative, multidisciplinary research opportunities within the U.S. research community and with international partners

OCCC

Ocean Carbon
& Climate Change

NACP

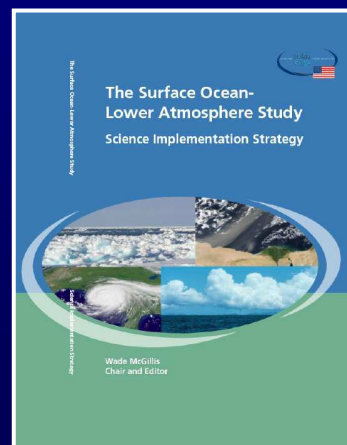
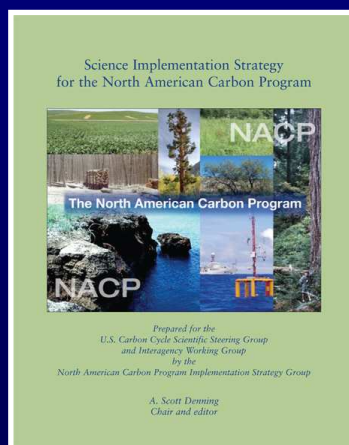
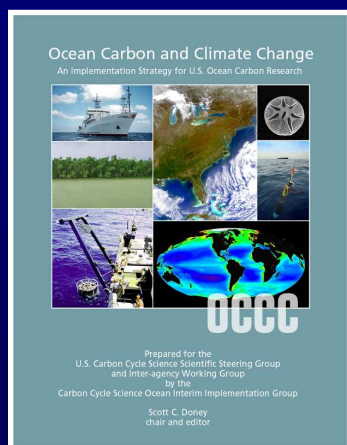
North American
Carbon Program

SOLAS

Surface-Ocean
Lower Atmosphere
Study

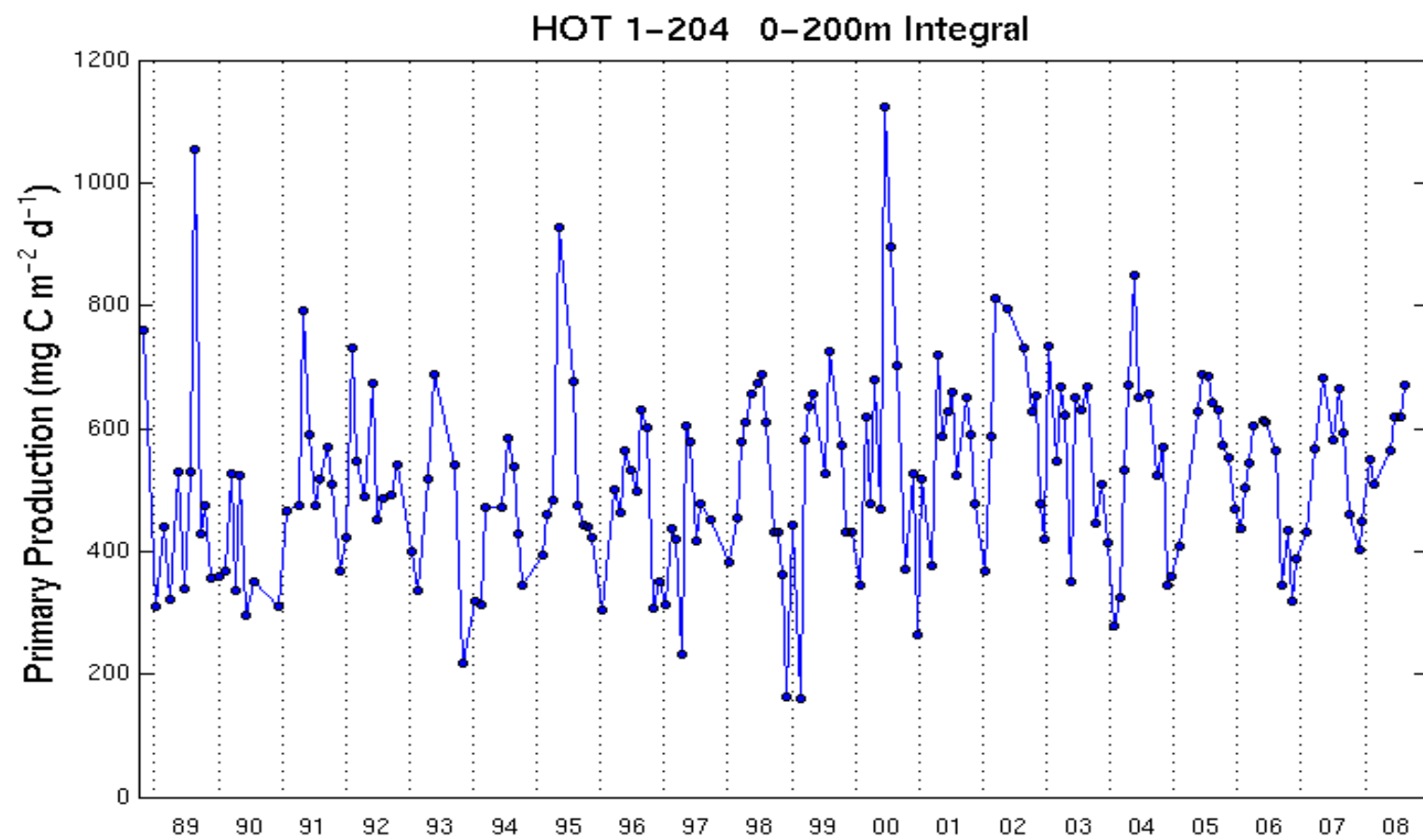
IMBER

Integrated Marine
Biogeochemistry
and Ecology



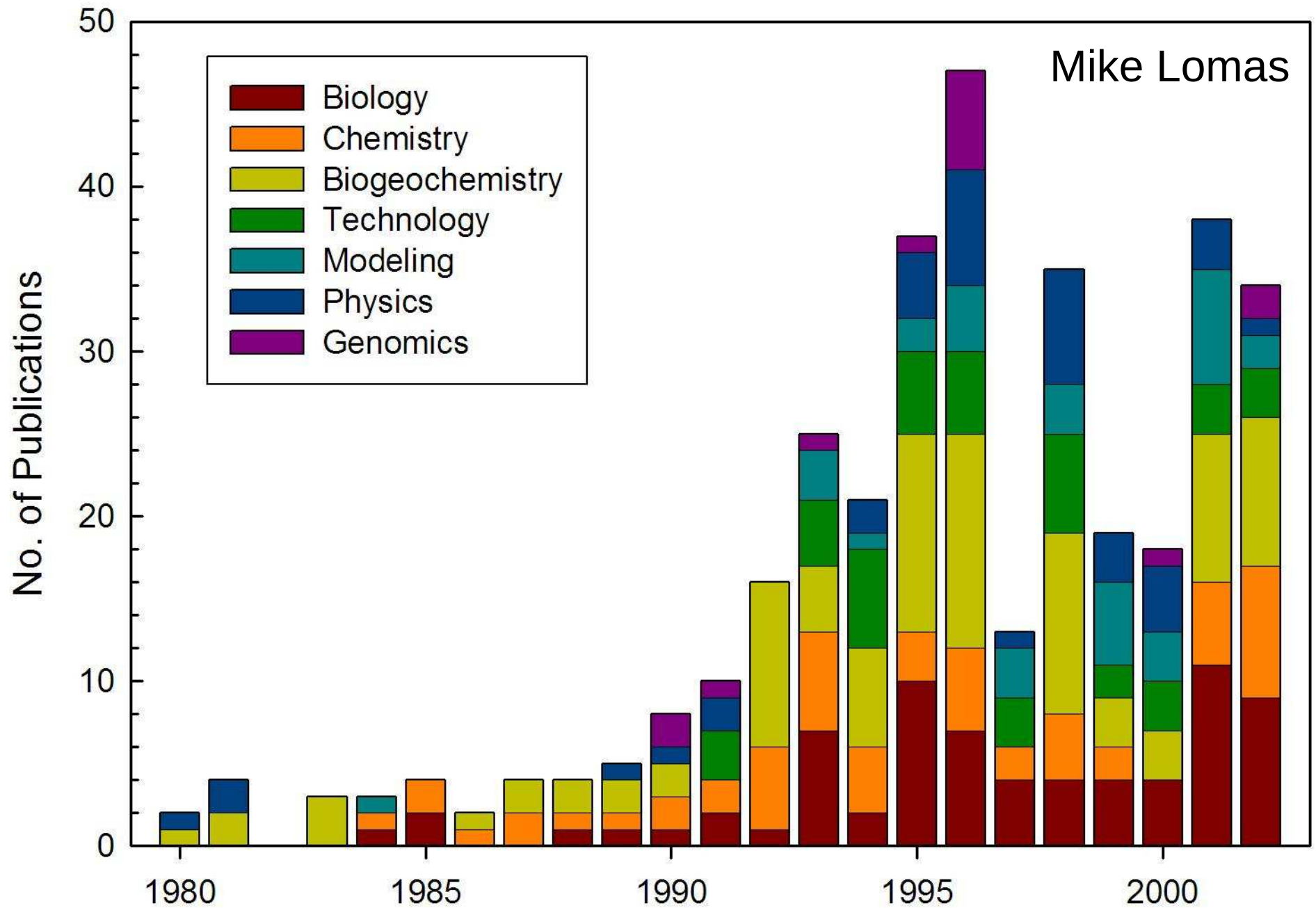
Strengths of existing sites:

- Ability to resolve monthly and inter-annual scale processes



Strengths of existing sites:

- Ability to resolve monthly and inter-annual scale processes
- **Interdisciplinary**



Strengths of existing sites:

- Ability to resolve monthly and inter-annual scale processes
- Interdisciplinary
- Centers for collaboration

Home institutions of BATS collaborators



Mike Lomas

Strengths of existing sites:

- Ability to resolve monthly and inter-annual scale processes
- Interdisciplinary
- Centers for collaboration
- Test beds for instruments & methods



Strengths of existing sites:

- Ability to resolve monthly and inter-annual scale processes
- Interdisciplinary
- Centers for collaboration
- Test beds for instruments & methods
- Hypothesis generators!!!!



PERGAMON

Deep-Sea Research II 48 (2001) 1449–1470

DEEP-SEA RESEARCH
PART II

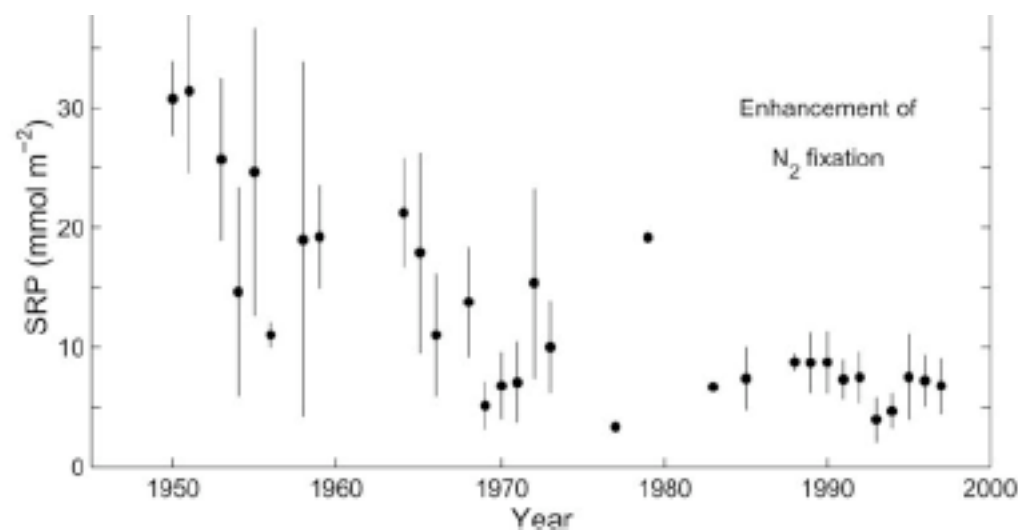
www.elsevier.com/locate/dsr2

Long-term changes in plankton community structure and productivity in the North Pacific Subtropical Gyre: The domain shift hypothesis

D.M. Karl^{a,*}, R.R. Bidigare^a, R.M. Letelier^b

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^b*College of Oceanic and Atmospheric Sciences, Oregon State University, Corvallis, OR 97331-5503, USA*



Weakness of traditional TS:

- There are too few of them

Weakness of traditional TS:

- There are too few of them
- They are expensive

The grim reality.....

NSF Biological Oceanography -

HOT

BATS

6 coastal LTERs

2 reef monitoring programs

~18-20% of its budget!

NSF Chemical Oceanography -
HOT
BATS
CARIACO
OFP - Ocean Flux Program

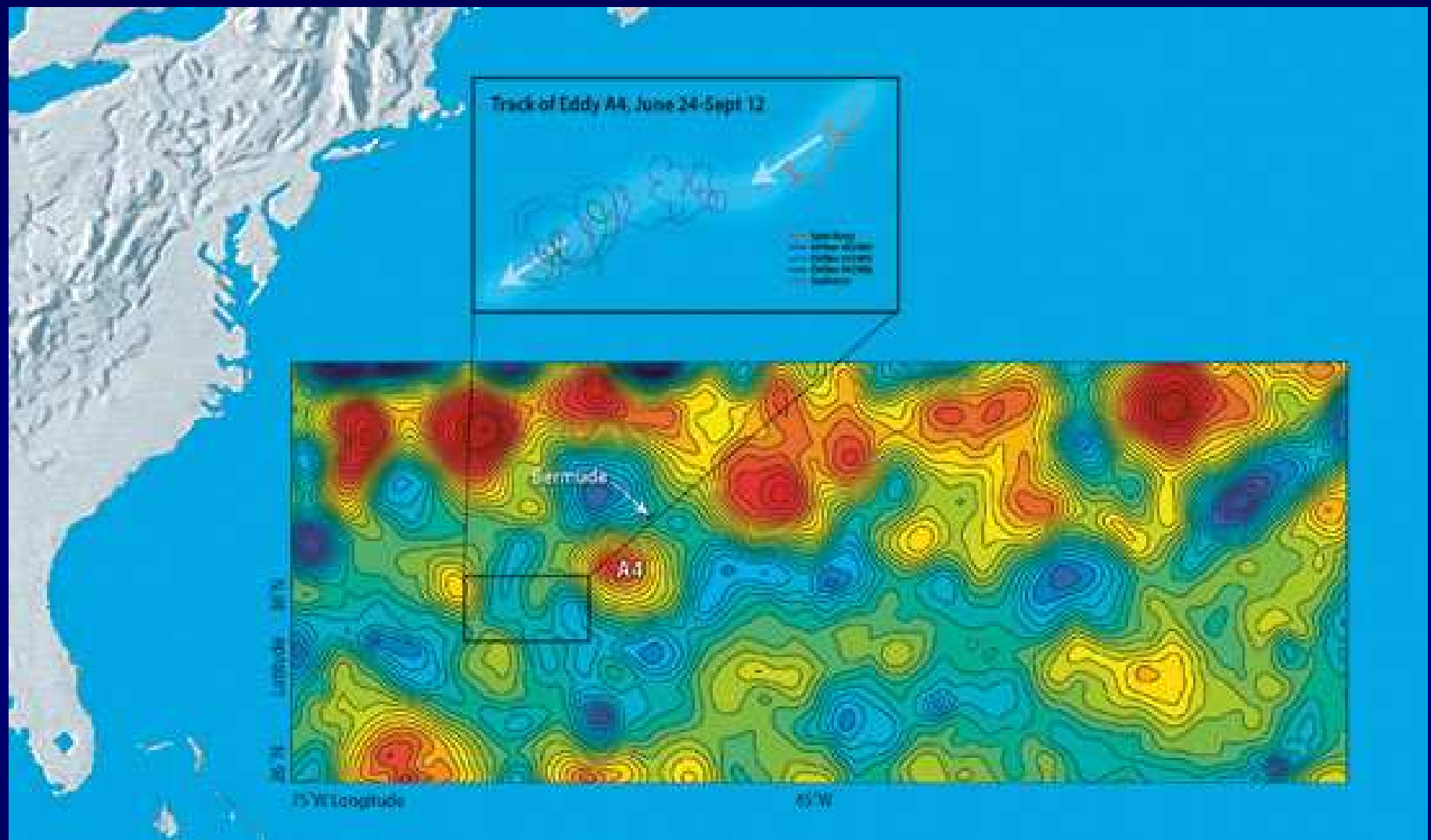
~12% of its budget!

Weakness of traditional TS:

- There are too few of them
- They are expensive
- Focus on the surface mixed layer

Weakness of traditional TS:

- There are too few of them
- They are expensive
- Focus on the surface mixed layer
- Lack of spatial context



Courtesy of Dennis McGillicuddy, WHOI, and the Colorado Center for Astrodynamics Research

Weakness of traditional TS:

- There are too few of them
- They are expensive
- Focus on the surface mixed layer
- Lack of spatial context
- Inability to resolve daily & event scale processes

SHIP OPERATING SCHEDULE CY 2008

R/V PELICAN

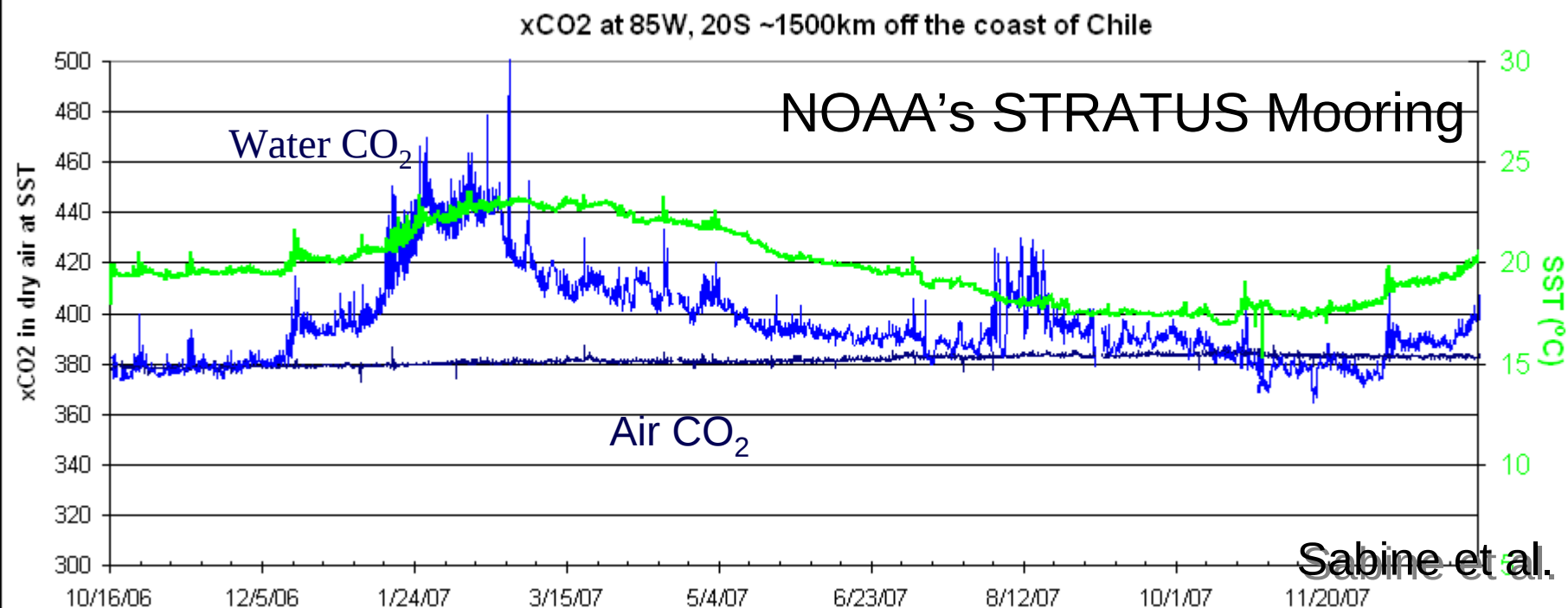
Cruise Dates	Map Index/Area/ Purpose	P.I./Institution/ Proposal No.	Ports	Days/ Agency/ Status/Clearance
09 JAN	NA9/GOM	Reginer, R./BMT	Cocodrie	2/Other/F
10 JAN	Moorings	N/A	Cocodrie	No
11 JAN	NA9/GOM/	Rabalais, N/LUMCON	Cocodrie	1/NOAA/F
11 JAN	Hypoxia	N/A	Cocodrie	No
13 JAN	NA9/GOM/	Poore, R./USGS	Cocodrie	2/USGS/F
14 JAN	Sediment Trap Cal	N/A	Cocodrie	No
24 JAN	NA9/GOM/	Orange, D./AOA	Cocodrie	7/NAVY/F
30 JAN	Mud Grabs	N/A	Cocodrie	No
01 FEB	NA9/GOM/	Benson, K./NDBC	Cocodrie	4/Other/F
03 FEB	Moorings	N/A	Cocodrie	No
08 FEB	NA9/GOM/	Herbers, T./NPS	Cocodrie	5/NAVY/P
12 FEB	Surface Waves	N/A	Cocodrie	No
13 FEB	NA9/GOM/	Trowbridge, J/WHOI	Cocodrie	4/NAVY/F
16 FEB	Fluid-Mud	N000140610718	Cocodrie	No

How do we move
the science
forward?

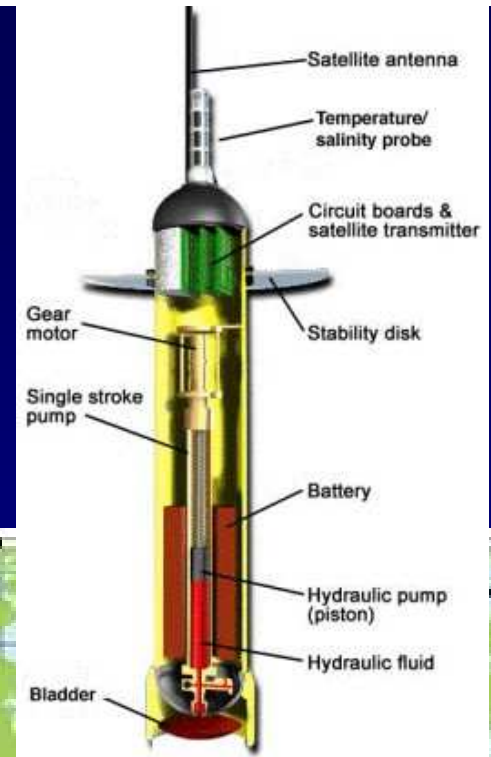
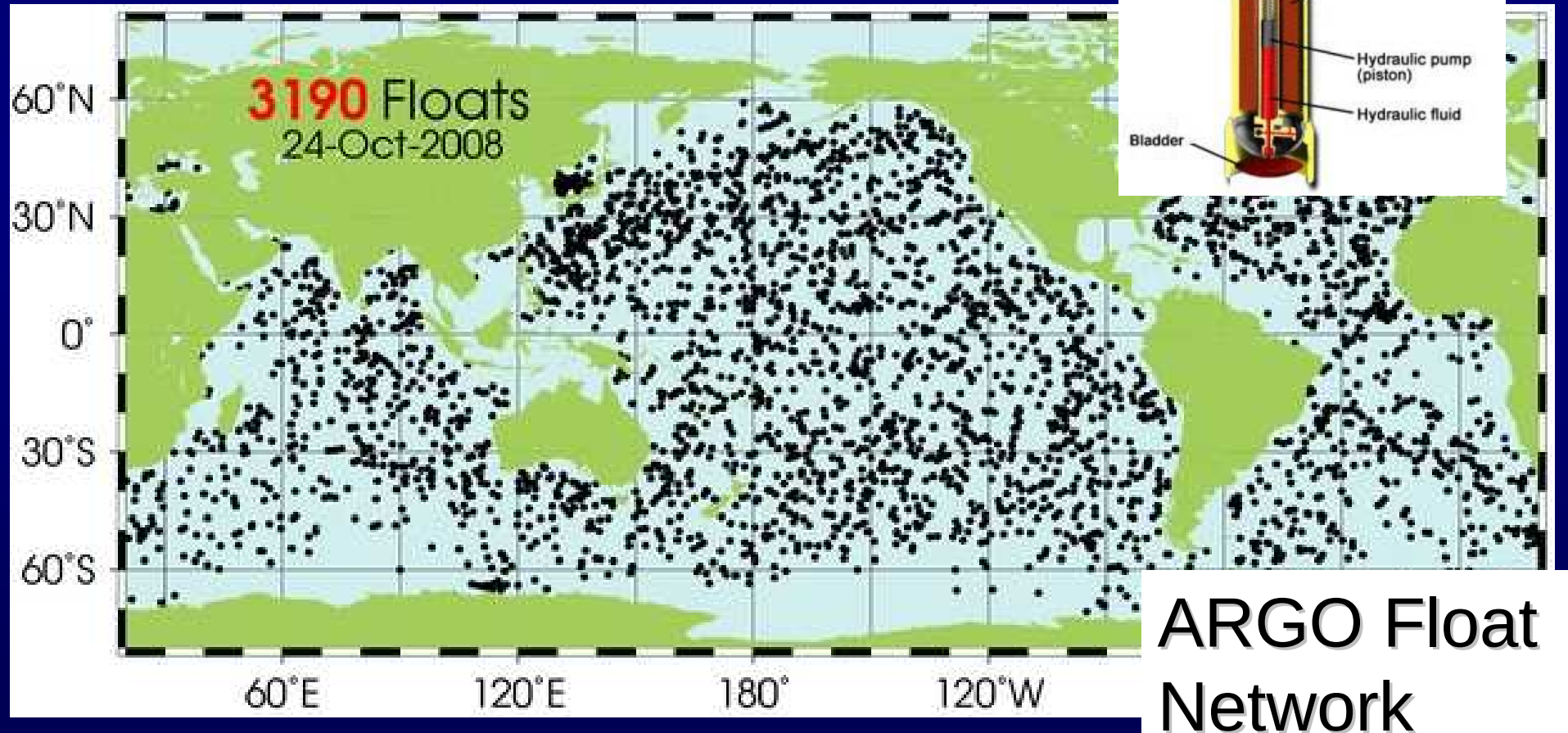
Moorings!
Gliders!
Floats!



Resolve time scales of minute to days.

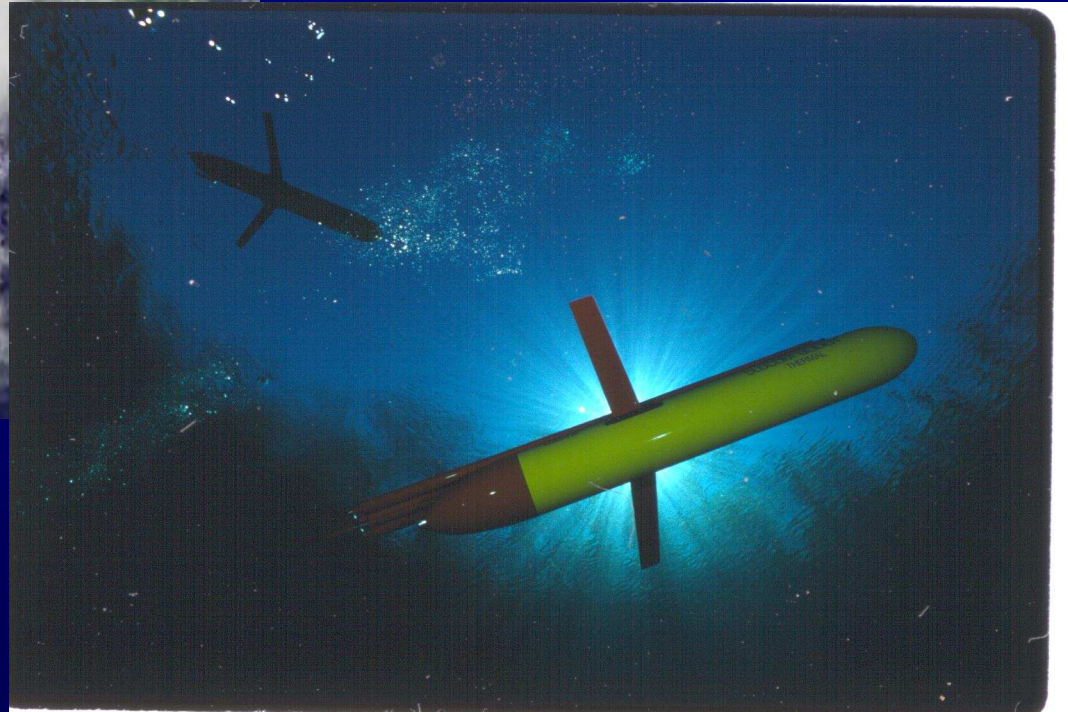


Provide spatial context



ARGO Float
Network

Can respond
on the event-scale



Can go where ships
can't....or shouldn't!



Action Items:

1. Move beyond chl & CO₂ -
develop platforms and sensors to
measure more things!

Expand mechanisms to fund
sensor development (e.g. ACT)

Expand training opportunities

Partner with engineering community

Consider effect on early career

The Dream Mooring

temperature
conductivity
dissolved oxygen
in vivo fluorescence
underwater PAR
current velocities
nitrate concentration
vertical diffusivity

profiling ability with
high frequency resolution

DIC
ph
pCO₂

DOC
TDN
ammonium
iron
phosphorus
TDP

Action Items:

2. Consider developing a sample archive system.

DNA, RNA, particulates, dissolved
Economy of scale – national
repositories?

Look at other programs for precedent –
Ocean Drilling Program

Action Items:

3. Establish certified reference materials

Fund development of references
Support method intercomparisons
Require use of reference materials
(tough love as a reviewer!)

Action Items:

4. Establish best-practice manual and technical training and exchange programs.

Examples: JGOFS Standard Method book and POGO – Partnership for Observations of the Global Ocean

Action Items:

5. Continue to streamline and interface datasets.