Global Intercomparability in a Changing Ocean
An International Time-Series Methods Workshop

November 28-30, 2012 (Bermuda Institute of Ocean Sciences)

WORKSHOP AGENDA

Tuesday November 27, 2012

Participants arrive in Bermuda

Wednesday November 28, 2012

08:00-08:15   Bus transports participants from Grotto Bay Beach Resort to BIOS

08:15-09:00   Coffee and continental breakfast

09:00-09:15   **Welcome and introduction** (W. Curry & N. Bates, BIOS, H. Benway, OCB, M. Telszewski, IOCCP)

09:15-09:30   **Workshop objectives** (L. Lorenzoni, USF)

09:30-10:30   **Plenary talks** (20 minutes each):

           Scientific importance of time-series: Repeat Hydrography (R. Wanninkhof, NOAA)

           Scientific importance of time-series: Insights from fixed point observations (R. Lampitt, NOCS)

           Challenges of maintaining/sustaining time-series in developing countries (V. Lutz, INIDEP)

10:30-11:00   Coffee break

11:00-11:30   **Time-series methods overview: Why results must be comparable from site to site** (K. Johnson, MBARI)

11:30-12:45   **Working Groups: Sampling protocols** *(each WG will have a list of time-series to examine the order of discrete sample extraction) - each chaired by a SAC member*

12:45-14:00   Lunch

14:00-14:20   **The Bermuda-Atlantic Time Series: An example of long-term time-series work** (M. Lomas, BATS/Bigelow)

14:20-17:00	**BATS tour**

17:00   **Poster session and mixer** (participants present a poster on their time-series)

19:00   Group Dinner at the Swizzle (http://www.swizzleinn.com)

Thursday November 29, 2012

08:00-08:15   Bus transports participants from Grotto Bay Beach Resort to BIOS

08:15-09:00   Coffee and continental breakfast

09:00-10:00   **Day 1: Sampling protocol working group reports (Moderator: L. Lorenzoni)**

10:00-11:00   **Working Groups - Discrete parameters, round I** *(each working group will have one variable assigned and will essentially build on the current core protocols)*

1. **Pigments**
2. **In line measurements**
3. **CTD parameters/discrete calibrations**
4. **Inorganic macro and micronutrients**
5. **Biomass**

Guiding questions for the working groups:
a.   *How many different methods are being used to measure these parameters, and are they intercomparable (i.e. has there been a direct comparison of the various methods)?*
b.   *Is there a consensus ranking of established methods (i.e. if you can't do X then proceed with Y)? If not, can we make one?*
c.   *What steps can we take now to ensure standardization of the methods? If consensus standards or CRMS are not available how do we achieve a meaningful comparison?*
d.   *Are there standard available? (same/different)?*
e.   *What are the limitations of each method?*
f.   *What are the uncertainties (QA/QC discussion)?*
g.   *What are the various state of the art methods and are there emerging technology for measurements is available?*
h.   *Is there a different nomenclature utilized at different time-series for these parameters? How can we standardize the nomenclature and reported units between time-series?*

11:00-11:30   Coffee break

11:30-12:30   **Working Groups - Discrete parameters, round I (continued)**

12:30-14:00   Lunch

14:00-16:00	**Working Groups - Discrete parameters, round** *(each working group will have one variable assigned and will essentially build on the current core protocols)* – *See guiding questions above*

1. **Carbonate System**
2. **Rates**
3. **Traps/Fluxes**
4. **Organic matter**

16:00-16:30	Coffee break
16:30-18:00	**Round 1 Discrete Parameters Working Group reports and open discussion** (Moderator: N. Bates)
18:00	Bus transports participants from BIOS to Grotto Inn
19:00	Group dinner/celebration at the Grotto Inn

Friday November 30, 2012

08:00-08:15	Bus transports participants from Grotto Inn to BIOS
08:15-09:00	Coffee and continental breakfast
09:00-10:30	**Round 2 Discrete Parameters Working Group reports** (working group leaders) **and open discussion** (Moderator: K. Johnson)
10:30-11:15	**Building consensus on biogeochemical sampling and measurement protocols** (plenary discussion moderated by L. Lorenzoni, H. Benway, M. Telszewski)

Guiding points for discussion include:

a. *identify major discrete sampling and measurement/analytical issues and define paths forward*
b. *Work on the base of a best practices guide (BPG) and modify it so that it describes the results from the working groups*
c. *BPG final categorization of methods will feature a tiered approach (with published precision and accuracy) so that methods are classified as:*
    i. *optimal = highest quality (accuracy/precision) and/or efficiency*
    ii. *good = medium quality (accuracy/precision) and/or efficiency*
    iii. *acceptable = lowest quality (accuracy/precision) and/or efficiency*
d. *Provide recommendations to facilitate comparison among TS that are using different protocols*
e. *What technologies are available to conduct the measurements identified? What is desired?*

11:15-11:30	Coffee break
11:30-12:30	**Building consensus on biogeochemical sampling and measurement protocols** (discussion cont'd)

12:30-14:00   Lunch

14:00-14:30   Plenary talk: **Autonomous observations in the context of ocean time-series sites: some recent science showcases** (A. Körtzinger)

14:30-15:00   Group discussion: **Recommendations for automated sensors/instrumentation (cross-calibration issues)** (Moderator: A. Körtzinger)

15:00-15:30   Plenary talk: **World of data: The joys of oceanographic time-series data** (C. Chandler)

15:30-16:00   Group discussion: **Cruise planning and metadata and building and/or improving infrastructure for data sharing** (Moderator: C. Chandler)

16:00   Adjourn

Participants can leave right after the workshop or stay until December 1. Your expenses will be covered for the night of November 30.

Workshop Sponsors

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