

Ocean Optics Protocols Workshop

October 25, 2014, Portland, ME

Conveners:

Steven Ackleson, Emmanuel Boss, Mark Bushnell, Antonio Mannino,
James Sullivan, Ken Voss, Jeremy Werdell, Giuseppe Zibordi

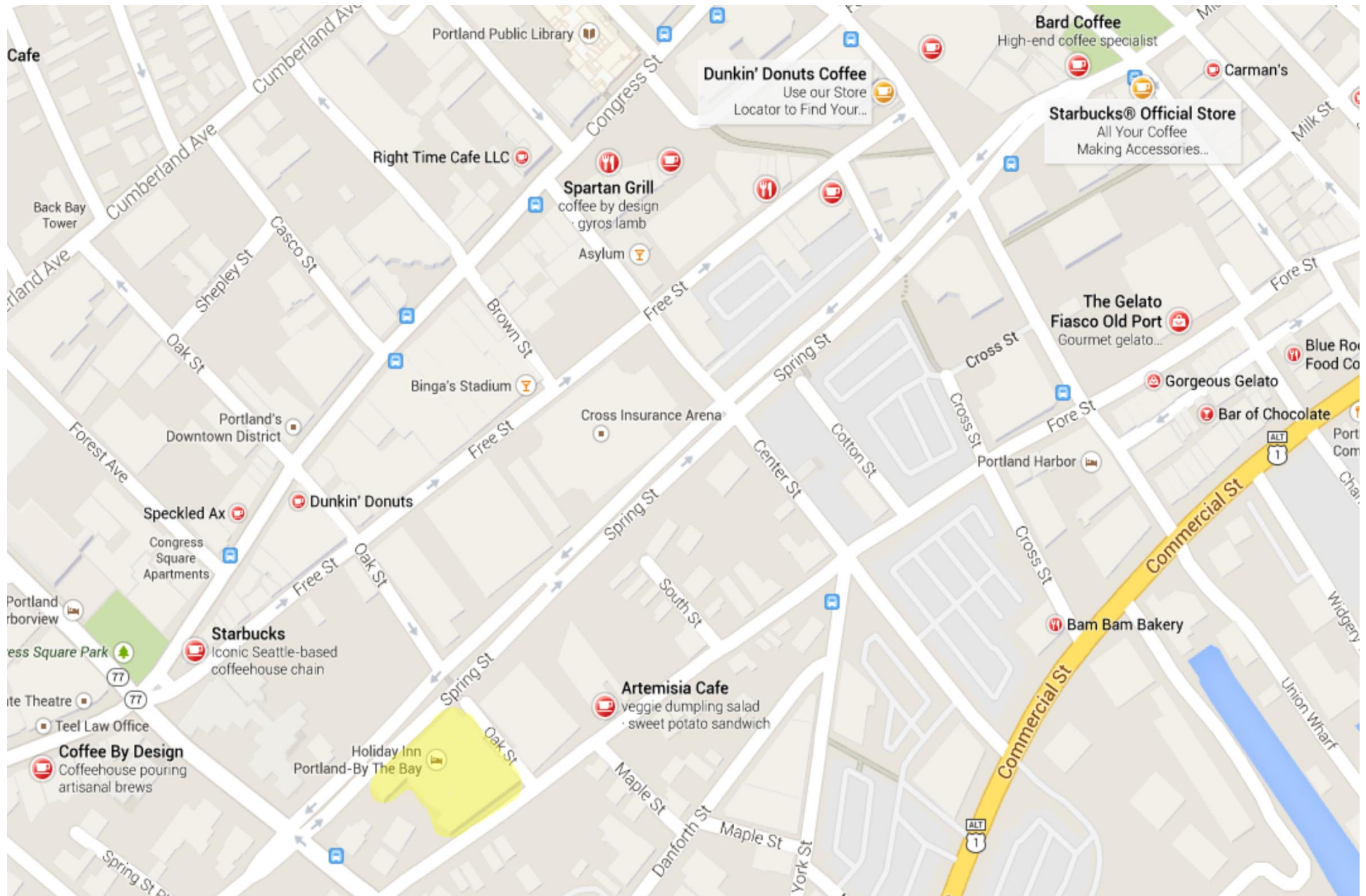
Participants:

Vittorio Brando, Nagur Cherukuru, Martina Doblin, Ana Dogliotti,
David Doxaran, Keping Du, David English, Scott Freeman, Joaquim Goes,
Tristan Harmel, Amir Ibrahim, B. Carol Johnson, Julien Laliberte, Zhongping Lee,
Edouard Leymarie, Martin Ligi, Hongbo Liu, Malcolm Mcfarland, Majid Nazeer,
Michael Novak, Mike Ondrusek, Renosh Pannimpullath Remanan,
Charlotte Robinson, Kevin Ruddick, Brandon Sackmann, Lino Sander de Carvahlo,
Seyedehsafoura Sedigh Marvasti, Wayne Slade, Nicole Stockley, Jing Tao,
Nandika Thapar, Michael Twardowski, Quinten Vanhellemont, Ian Walsh,
Guoqing Wang, Jianwei Wei, Dana White, Nikolaos Zarokanellos

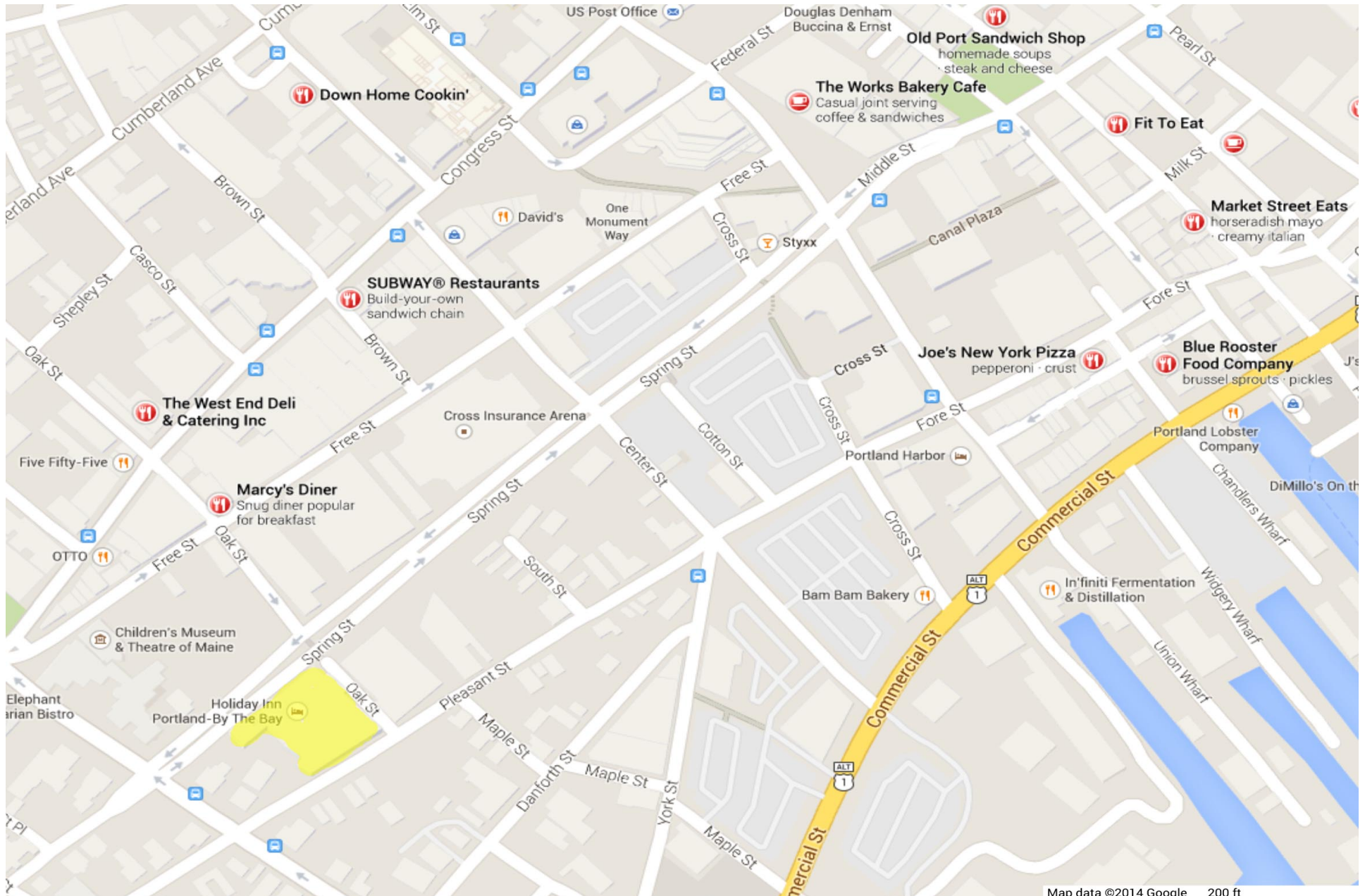
Sponsors:

NASA (Paula Bontempi), IOCCG

Logistics: Coffee



Logistics: Food



Agenda

08:30 Plenary: Welcome/Introduction (**Ackleson**)
Somerset Room

09:00 Data Quality Assurance (**Bushnell**)

09:30 Beam Attenuation (**Boss**)

10:00 Break

10:30 Backscatter (**Sullivan**)

11:00 In-Water Radiometry (**Voss**)

11:30 Above-Water Radiometry (**Zibordi**)

12:00 Breakout Charge (**Ackleson**)

12:15 Lunch (informal)

13:00 Property-Specific Breakout Discussions
- c & b_b (**Boss/Werdell/Mannino/Sullivan**)

Somerset Room (same as Plenary)

- In Situ/Above Water Radiometry (**Voss/Zibordi**)

Cumberland/Kennebec Room

15:30 Plenary: Breakout Summaries
Somerset Room

16:30 Concluding Remarks

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- Summarize Existing Protocols
 - Discuss Recent Advances
 - Proposed Revisions

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- Team Members
 - Tasks/Approach
 - Funding Sources
 - Timeline

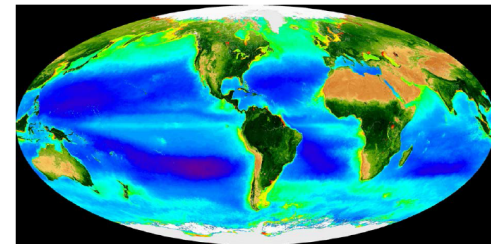
Workshop Objectives

To plan and coordinate future work directed at updating protocols for measuring in situ and above water optical properties in support of ocean color science.

Expected Outcomes:

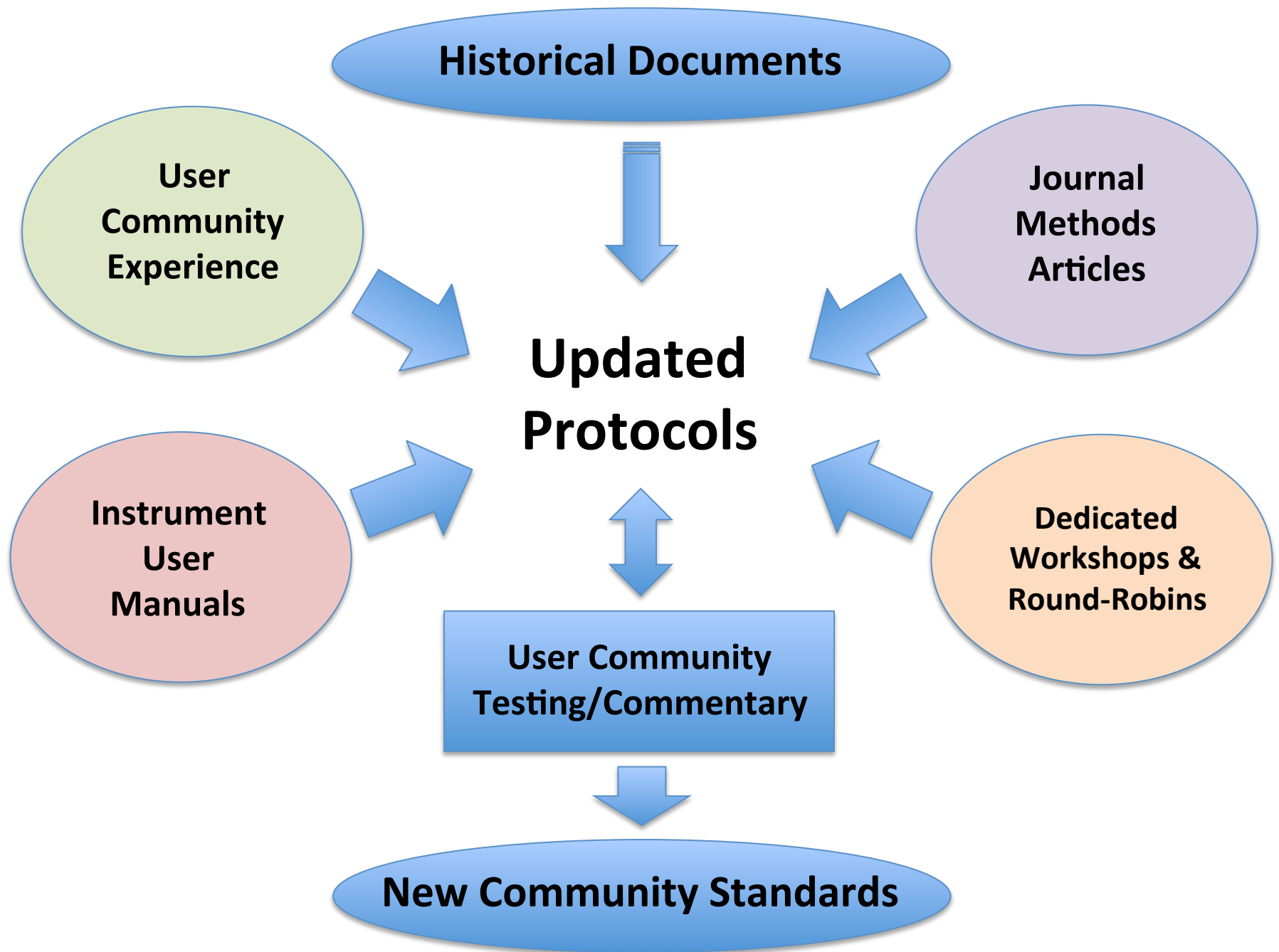
- Summary of next steps
- Parameter-specific teams
- Time-table for progress
- Funding plan
- Report to be submitted to NASA and IOCCG

Pre-Aerosol, Clouds, and ocean
Ecosystem (PACE) Mission
Science Definition Team Report



October 16, 2012

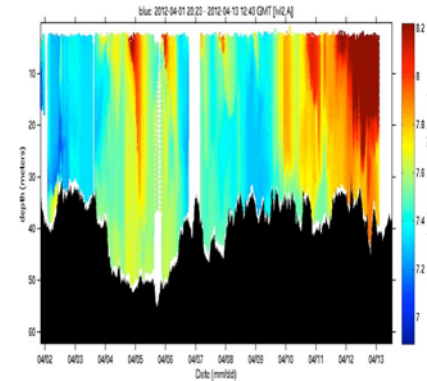
<http://decadal.gsfc.nasa.gov/pace.html>



Existing Ocean Optics Protocol Documents

Primary Source	Parameters							
	AOPs			IOPs				
	$L_w(0-)$	$L_w(0+)$	k	a	b_b	c	β	γ
NASA/TM-2003-21621/R4&5, V1-7 (2003-4) (http://oceancolor.gsfc.nasa.gov)	✓	✓	✓	✓	✓	✓	✓	
Other Sources:								
Coastcolour-RRPinsitu-v1.0 (2011) (http://www.coastcolour.org)	✓	✓						
IMOS (imos.org.au)				✓	✓	✓		
IOCCG (http://www.ioccg.org)	✓			✓	✓	✓		
NASA/TM-2010-215856 (http://oceancolor.gsfc.nasa.gov)	✓	✓						
http://www.ioos.noaa.gov/qartod				<QA/QC Procedures>				

Protocols



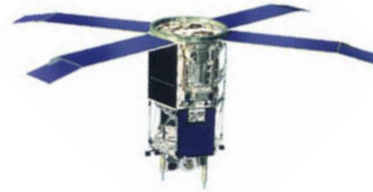
Prepare → Acquire → Analyze → Report

Problem Domain

Optical Parameters

L_{rs}

Related Parameters



Aerosols

O_3
 NO_2

Group 1

$a_p, a_g, b_p,$

$\{ \beta, \gamma_{cp}, \gamma_{bbp}, \rho_{bot} \}$

$b_{bp}, c_p,$

L_u, E_d

Group 2

SPM, PSD, POC, PIC,
Pigments, Taxonomy,
Biomass, ...

Other Protocol Activities

NASA/GSFC, Field Support Group (antonio.mannino@nasa.gov)

Absorption due to CDOM (a_g):

- Workshop convened in November 2013 (NASA/GSFC)
- Instrument comparison: double-beam spectrophotometers, Ultraphaths, PSICAM, a-sphere, and ac-s
- POC: Norm Nelson (norm@eri.ucsb.edu)

Absorption due to marine particles (a_p):

- Workshop convened in June 2014 (NASA/GSFC)
- Instrument comparison: QFT, T-R technique, internal integrating sphere, ac-s, a-sphere, and PSICAM.
- *In situ* IOP Workshop Winter/Spring 2015
- POC: Aimee Neeley (aimee.neeley@nasa.gov)

Particulate Backscatter (b_{bp}):

- Workshop planned for March 2015 (Location TBD)
- POC: Jeremy Werdell (jeremy.werdell@nasa.gov)

Phytoplankton composition workshop #1:

- Workshop planned for Summer 2015 (Location TBD)
- Initiate discussion on reporting practices for databases (e.g., SeaBASS)
- POC: Jeremy Werdell (jeremy.werdell@nasa.gov)

New IOCCG Protocol Coordination Activity

Committee to be established to catalog information related to *in situ* measurement protocols:

- telecons several times each year to discuss activities and progress and identify new events, funding opportunities, and coordinating participants
- composed of individuals with access to information about institutional activities and funding opportunities; not necessarily protocol practitioners

Purpose: to reduce redundancies in efforts, collaboratively fill gaps, and target new opportunities to move the community forward

IOCCG Web site will provide a clearinghouse of protocol information:

- documents (protocol reports & user's guides)
- calendar of ongoing & future activities
- list of international funding opportunities

POC: Jeremy Werdell (jeremy.werdell@nasa.gov)

Additional Protocol Activities???

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