Breakout Session Instructions

The goal of the four breakout sessions is to provide a cross-disciplinary forum to identify a pilot project/s or activities for each demonstration theme that will facilitate improved, integrated, multi-disciplinary observations around that theme. We envision the activities/projects having a 2-5 year time line, but if participants discuss/decide a project requires 10 years and can realistically be scoped to that time frame we will not restrict participants to the shorter time frame.

The breakout discussions are divided into four sessions, each followed by a “report out” session in plenary. We know some experts are in themes outside of their area of expertise but this is deliberate on the part of the organizers to encourage the multi-disciplinary discussions that are the main focus of the workshop. The “report out” discussion session in plenary will provide an opportunity to hear discussions from the other themes and allow experts an opportunity to contribute to each of the demonstration themes. Thus, we are asking participants not only to contribute to their ‘assigned theme’ but also to the discussions of other themes in these plenary sessions. In addition to these breakout reporting sessions, we have also included two plenary discussions, one after the second and one following the third breakout sessions, which will allow further development and discussion of overarching themes or challenges across demonstration themes and disciplines.

The four breakout sessions are intended to build on the previous session(s) to identify and develop ideas for activities/projects that could be put forth for funding proposals or implementation with existing resources/projects in the near future to improve integrated, multi-disciplinary observations around each theme. We plan that some workshop participants will volunteer to take on the role of rapporteur from each breakout in the “report out” sessions. There will be specific note takers to help with this task and, in addition to guiding the discussions and keeping proceedings on time, the session co-chairs will also be able to assist the rapporteurs. Specifically we ask co-chairs to ensure the final 10-15 minutes in each breakout session are dedicated to finding group consensus on what will be reported out in plenary so the rapporteurs can work with the note takers to present an accurate summary of the discussions to the other participants. Some template power point slides will be provided to also assist with reporting out.

The first breakout session discussion will focus on scoping potential integrated, multidisciplinary projects, activities or focal regions/topics for each demonstration theme. This will include identifying impacts or significance of the proposed activities/project as well as setting requirements.

The second breakout session will focus on what is needed for technical implementation of the identified activities, i.e. we will be ‘down in the weeds’ regarding the project/activities’ current feasibility and any developments that will be needed to realize them.
The third breakout session will take a step back and think about programmatic implementation and what is needed to make these projects happen in a practical sense.

The fourth and final breakout session will work to bring a little consistency to the emerging project/activity plans across the demonstration themes and ultimately perhaps identify 1 or 2 projects from the workshop overall as a priority of development ahead of Ocean Obs’19.

**Wednesday Feb 8**

Breakout Session 1 – Framing Demonstration Themes and Associated Requirements: Given the demonstration theme descriptions provided to you before the meeting and the presentations this morning, the goal of this first breakout session is to identify one or several, focused project/activity ideas for the theme (focused either geographically, temporally or by topic/question). We suggest an initial period of brainstorming with participants proposing some general ideas of projects/activities, or focal areas. Eventually the group should refine this list to 3-5 activities that can be carried forward into subsequent discussions and further developed. The process of refining the list of activities and projects should include discussion of some (or all) of the topics identified below. The projects/activities should be multi-disciplinary but something as simple as adding a disciplinary capability to an already existing project is valid. Discussion topics to refine the list of projects/activities include:

- Societal impact(s) of the project(s)
- Gap assessments
- Technology requirements
- Financial feasibility
- Any new observations, data and modeling requirements
- Identifying possible implementation challenges

**Plankton Rapporteur:** (invitee)

**OMZ Rapporteur:** (invitee)

**Boundary currents Rapporteur:** (invitee)

**Thursday Feb 9**

Breakout Session 2 – Technical Implementation Planning: For each of the 3-5 projects/activities identified yesterday in this breakout session we ask participants to really dig down into the technical challenges of realizing each of the projects. From yesterday’s breakout you should have an initial list of implementation challenges. What are the finest details of the technical challenges here and what are the pathways to resolving them. Discussion topics to include:

- Identify near-term innovation priorities for observing platforms and sensors, data and modeling to enable multi-disciplinary observations
- Identify programmatic and professional expertise necessary to support specific project/activity (organizations, projects)
- Scope an implementation plan for the project(s): begin discussions of how we might actually make the projects a reality - (if time as breakout session 3 will tackle this in more detail)

Plankton Rapporteur: (invitee)
OMZ Rapporteur: (invitee)
Boundary currents Rapporteur: (invitee)

Prior to the third breakout session there will be an opportunity in plenary to discuss approaches to and options for an integrated plan for demonstration theme implementations. This is an opportunity for synthetic discussions across demonstration themes. Are there any similar projects/activities identified across themes or even if not are there any similar technical challenges identified across themes? If so this plenary is intended to provide some time to discuss these in more detail, find potential resolutions and allow each demonstration theme to proceed to breakout session 3 discussion on implementation with these common solutions in mind.

Breakout Session 3 Program Implementation Considerations:
Following the detailed discussions of technical challenges/issues this session is focused on developing an implementation plan including timelines, identification of partners, funding sources, etc. By the end of this session we hope to have at least one project or activity (but hopefully up to 3 projects/activities) for each demonstration theme developed from end-to-end: from the goals of the project, through technical details and all the way to a timeline and implementation plan with collaborators/partners and funding requirements/sources identified.

Discussion topics may include:
- Project/Activity milestones for both a 2 year and a 5 year project
- Schedules and detailed needs for implementation (including project management)
- Funding requirements

Plankton Rapporteur: (invitee)
OMZ Rapporteur: (invitee)
Boundary currents Rapporteur: (invitee)

Friday Feb 10

Prior to the final breakout session there will be an opportunity in plenary to discuss implementation strategy/s. This is a further opportunity for synthetic discussions across demonstration themes. Given any similarities identified across demonstration theme projects/activities this plenary is intended to provide some time to discuss the potential syntheses of implementing them in more detail. Also this session may consider if there are any front-runners for overall recommendations/priorities for implementation from the workshop ahead of Ocean Obs’19. We hope this session will allow each demonstration theme to proceed to the final breakout session with these discussions in mind and allow them to fine tune/tweak the implementation plans for their projects.
Breakout Session 4 – Reviewing Implementation Strategy and Developing Recommendations for Pilot Projects:

- Create a consolidated project/activity plan
- Identify opportunities for ongoing collaborations and communication
- Identify potential opportunities for funding support for integrated multi-disciplinary projects/activities

**Plankton Rapporteur:** (invitee)

**OMZ Rapporteur:** (invitee)

**Boundary currents Rapporteur:** (invitee)

Following breakout session 4 all participants will re-group in plenary and consider overall which of the project activities they might support/recommend as priority projects to be initiated with a goal of having some preliminary steps executed to be reported on at Ocean Obs’19.