

Ocean Acidification Principal Investigators' Meeting

Breakout group topics and discussion questions

Topic #IV: Improving Research on the Physiological and Ecological Responses to

OA. *In addition to the best practices in OA research, which outline the most appropriate ways to perform standardized chemical monitoring and experimental design, researchers are increasingly bringing in methods from other non-oceanographic disciplines (e.g., “-omics”, etc.). What measurements and tools are particularly helpful or relevant for tackling some of the toughest questions in OA research?*

A. What science needs to be done (how can we use these other sciences to enlighten our understanding of the responses of organisms and ecosystems to OA)

1. Physiological sciences, systems biology, evolutionary biology, etc.
2. OMICs
3. Biological/chemical monitoring; What tools are ready for moorings, gliders, floats, AUVs, proxy approaches
4. Adaptation studies
5. Evolution studies
6. Paleobiology, paleoecology, proxies
7. Biogeochemistry and the interactions with all of the above

B. What can we learn from these fields as they've been applied in terrestrial sciences?

C. What are the barriers to using some of these approaches?

1. Natural research (disciplinary) barriers (different languages, interests, motivation)
2. Funds
3. Agency/university structures

D. How to facilitate that science through:

1. Collaborations (cross-agency, cross-disciplines, public-private collaborations; policy world international)
2. Synthesis & modeling – what information is out there already that can be useful

E. How to support that science through:

1. Data management – what data are most important to collect? - links to other data centers or information outlets (e.g., economic and other societal data)
2. Facilities

F. Building capacity

G. What actions should be done immediately to get this going?

1. Recommend new research directions?
2. OCB support on specific activities? (meetings, data support, synthesis)