Summary of last year's POS activities

- Update on Framework on Ocean Observations (Eric Lindstrom, NASA)
- Review of upcoming Ocean State and Surface Flux Estimation Workshop (Tony Lee)
- Briefing on AMOC Science Team (Bill Johns)
- Greenland Ice Sheet/Ocean Interactions Program (Olga Sergienko)
- Eastern Tropical Ocean Synthesis WG (Simon de Szoeke)
- ENSO Diversity WG (Antonietta Capotondi)
- Extremes WG (Matt Barlow)
- Discussions on National Climate Assessment (Joint with PPAI)
- North American Water Project (Nick Bond)
- Update of Renalyses Projects (Yan Xue and Nick Bond)
- New Process Studies (Joint with PSMI)
  - Intra-Americas Study of Climate Processes (Art Douglas)
  - Salinity Processes Upper-ocean Regional Study (Tom Farrar)
- Discussions about science plan

Charge to Panel Business Breakouts

- Advise U.S. CLIVAR on research priorities, identify research gaps, and develop suitable milestones to promote funding opportunities.
- Develop and encourage mechanisms (e.g. community workshops, commissioned studies, Working Groups) to further the develop and implement U.S. CLIVAR goals and research challenges.
- Advise on the adequacy and effectiveness of Working Group plans and implementation.
- Consider necessary coordination with other national and international activities to develop integrated, efficient, and effective plans.
- Liaise with other U.S. CLIVAR Panels to ensure relevant needs are considered in their efforts.
- Generate a list of accomplishments and progress over the past year, action items for the Panel and set of recommendations for SSC and Funding agency consideration.

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POS Panel Terms of Reference

- Review, prioritize, and coordinate U.S. plans for relevant studies needed to identify and elucidate observable physical coupled ocean-atmosphere-land mechanisms, processes, and phenomena in the global climate system. Studies such as diagnostics and evaluation of observations and model results, characterization of the coupled system, and others are envisioned to be addressed.

- In consultation with other groups, assess elements of, identify needs of, and coordinate plans for the sustained climate observation system especially for the ocean (including the development, assemblage, and curatorship of climate records), to improve monitoring, prediction, and simulation of the coupled ocean-atmosphere-land system.

- Guide and assess efforts to extend the record of past climate variability through assembly of quality-controlled instrumental data sets & paleoclimatic data.

- Identify, review, and prioritize regional observational efforts that should be pursued through limited deployments (aka enhanced monitoring) to advance our understanding of climate-relevant processes and phenomena.

- In consultation with other groups, assess and prioritize plans, and coordinate activities that lead to syntheses of observations and models in order to develop consistent four dimensional climate products (i.e., climate reanalyses).

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POS Motivating Questions

We now have about a decade of ARGO and some other elements of the sustained ocean observing system along with different ocean reanalyses and synthesis products.

- How does this context guide us/encourage us/concern us going forward?
- For example, how does one combine decadal repeat hydrography with ARGO?
- One lesson from the present observations is that they are not obviously affordable and are under duress, so how does this color how we consider going forward from Ocean Obs 09?
- What is U.S. CLIVAR's role – e.g., to wisely guide what to sustain, what to sunset, what priorities should be addressed when it is clear that not all we wish to do is affordable?

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Inter-panel Interaction

Questions:

- Do POS and PPAI see that work by PSMI has supported or guided their own efforts ?
- Does PSMI ask POS and PPAI for inputs on what processes need to be researched and improved upon in models?
- Does PPAI identify processes and parameterizations that are poorly understood and/or sources of model error and inform PSMI?
- Does POS ever interact with PSMI in the sense of saying, let's leave some of those observing resources in place after the process study to gain from what you learned?
- Would you change/refine the Panel, Working Group, and CPT structure and approach?

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Cross-Cutting Strategies⇨ Goals ⇩	*Sustained and new observations*	*Process studies*	*Model development strategies*	*Quantifying improvement in predictions and projections*	*Communication of climate information*
Understand the role of the oceans in climate variability on different timescales	Document variations	Data to evaluate and improve models	Improve modeling of climate across processes and timescales	Understand limits of climate predictability	Prioritize observing network and predictability studies and improve predictions of ocean and climate variability
Understand the processes that contribute to climate change and variability in the past, present and future	Document climate-critical processes	Investigate processes to help explain variations	Property conserving climate reanalyses	Quantifying importance of model uncertainty in projections	Set priorities for observations and predictability studies; communicate about confidence and predictability
Better quantify uncertainties in the simulations and projections of climate	Initialize and evaluate model simulations	Model assessment	Improve models	Quantify model, structural and scenario errors	Address needs for predictability and sensitivity studies
Improve the development and evaluation of climate simulations	Initialize and evaluate climate models	Provide data to develop and test model process representation	Reduce biases in climate models	Quantify importance of model physics errors	Determine key targets for model development across communities
Collaborate with research communities that develop and use climate information	Provide multi-disciplinary datasets	Provide process understanding and opportunity for collaboration across disciplines	Communication between observational and model communities	Improved communication across disciplinary boundaries	Provide information on dominant climate phenomena and predictability