

# Charge to Panel Business Breakouts

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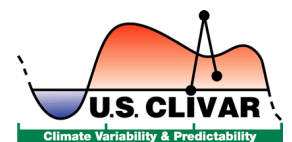
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- Advise on the adequacy and effectiveness of Working Group plans and implementation.
- Consider necessary coordination with other national and international activities to develop integrated, efficient, and effective plans.
- Liaise with other U.S. 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.

# POS Panel Terms of Reference

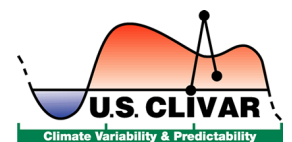
- Review, prioritize, and coordinate U.S. plans for relevant studies needed to identify and elucidate **observable physical coupled ocean-atmosphere-land mechanisms, processes, and phenomena** in the global climate system. Studies such as diagnostics and evaluation of observations and model results, 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** (e.g. climate reanalyses).



# 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.

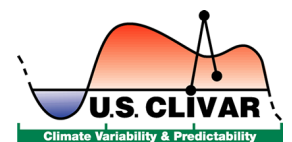
- How does this context guide us/encourage us/concern us going forward?
- For example, how does one combine decadal repeat hydrography with ARGO?
- How do we move forward balancing the vision of Ocean Obs 09, of expanding sustained observing, including in a multidisciplinary way, with the present fiscal constraints, which include challenges to even the exiting observing system?
- What is U.S. CLIVAR's role – e.g., to wisely guide what to sustain, what to sunset, what priorities should be addressed? How should U.S. CLIVAR contribute to evaluation of sustained in situ and satellite observing systems?
- Are there recommended changes to the POS Panel terms of reference to reflect the goals and cross-cutting strategies of the new Science Plan?





# PSMI Panel Terms of Reference

- Review, prioritize, and coordinate U.S. scientific plans for, and programmatic support of, relevant process studies, CPTs and other investigations that lead to **improved parameterizations** of critical climate processes, **better quantification of climate model uncertainties**, **improved climate model fidelity**, and **validation of observing systems** aimed at increasing their global utility, as necessary to achieve the goals of CLIVAR.
- Develop and encourage mechanisms (e.g. community workshops, commissioned studies, Working Groups) to further the development and implementation of **timely and relevant process studies** and a research strategy, including filling gaps.
- Guide, assess, and coordinate efforts to improve utilization of process-oriented research and limited observation campaigns in **parameterization and model development** (especially in national and community model activities) through the use of CPT and similar frameworks.

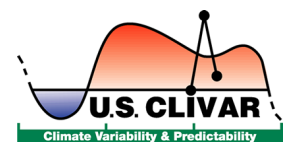


# PSMI Motivating Questions

U.S. CLIVAR has a strong history of implementing regional process studies that “bubble-up” from the community.

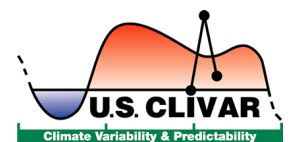
- How well are we doing at diagnosing the potential sources of uncertainty in predictions and projections and then listing these together with establishing a sense of both the feasibility of addressing them and the likelihood of making real progress in addressing them?
- Another reason for a process study might be to identify and better describe a mode of variability that could be a new source of predictive skill. Is this a suitable stand-alone rationale? As we look at longer time scale processes, do we evolve our notions of what process studies are?
- A pragmatic question is whether or not the agencies are funding the analysis tail to follow these process studies sufficiently to allow a comprehensive even if not complete mining of the good results that would have impact on model improvement.
- Is U.S. CLIVAR going into the field too often, with too little time between field studies and not having time and support to derive maximum benefit from the process studies?
- What are the measures of success for a CPT? What lessons learned/best practices have emerged from the series of CPTs supported to inform future CPT formulation?
- Are there recommended changes to the PSMI Panel terms of reference to reflect cross-cutting strategies of the new Science Plan?

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# PPAI Panel Terms of Reference

- Review, prioritize, and coordinate U.S. plans to **characterize predictability**, and **demonstrate improved prediction** capabilities, on sub-seasonal, seasonal, S-I, decadal, and century and longer time scales as necessary to achieve the goals of CLIVAR.
- Interface with agency and USGCRP activities and groups (e.g. NOAA-NMFS, IRI, and RISAs; NASA-RESACs, RACs, and ESIPs) to **identify user requirements** for useful climate information, **improve the communication** of these requirements, and encourage development of appropriate **tools and approaches for improved decision support** capabilities.
- Coordinate U.S. efforts to insure advances in prediction research have appropriate connections and **pathways into operational forecast system development**.



# PPAI Motivating Questions

- How are improvements to prediction capability measured? What other useful measures could be employed? How well are metrics identified through U.S. CLIVAR efforts used for predictive model evaluation?
- How should uncertainty in predictive information be quantified to be of use?
- How well do research advances in model development and predictive capability transfer to operational forecast system development. What are the impediments, if any, to such transfer? How can the transfer be improved?
- What are effective and useful ways to interface with applications? How do we determine which application topics to engage? What outcomes are desired through such interaction?
- How does the panel “encourage development of appropriate **tools and approaches for improved decision support capabilities.**”?
- Are there recommended changes to the PPAI Panel terms of reference to reflect the goals and cross-cutting strategies of the new Science Plan?

