

U.S. CLIVAR Process Study and Model Improvement Panel
Summary of activities during 2005-2006
Co-chairs Meghan Cronin and Jim Hack
Former co-chair: Paul Schopf
July 3, 2006

1. At the first Summit in August 2005, the PSMI panel formulated a set of goals, each with a set of near term and long term activities, and PSMIP action items. In September 2005, Sonya Legg (PSMIP member) and other CLIVAR scientist at GFDL met with Ants Leetma to discuss the PSMIP goals and activities. Feedback from this meeting and extensive panel discussion via email resulted in further refinements to the goals, activities, and action items. The most recent version of the PSMIPgoals.ppt was dated Oct 11, 2005. The list below describes the present status of the PSMIP Action Items.

2. As discussed below, the bulk of the PSMIP work during the past year has been in developing the assessments for PUMP, VOCALS, and DIMES. These have been challenging, not only because they have required scientific rigor, but also because the nature of these assessments differs from that which the panel normally engages in. In particular, the panel is not anonymous and many members are involved directly or indirectly in the process studies. It was noted that both co-chairs were co-authors on the PUMP science and implementation document. To address the panel's reticence, for all assessments, the point person declared any conflicts of interest, which were expected and deemed acceptable. Also, the co-chairs encouraged all panel members to participate in the assessments in order that the assessments would reflect a broad consensus (or lack of consensus). Free and open dialogue was encouraged. The co-chair wrote to the group: "We will lose the fun of scientific inquiry if we censor ourselves within a group such as this... I sincerely hope that everyone feels comfortable to participate in scientific dialogue and that activities progress naturally. I for one don't want to be involved if it is otherwise".

There was significant panel activity associated with preparation for the Atlanta AMS Townhall, for which many of the panel members were in attendance. It was during this time that the panel developed the concept of a set of "best practices for process studies," a concept that will be more fully developed at the 2006 Summit.

3. Science, coordination, and planning activities were organized around the PSMIP goals discussed in section 1. We comprehensively enumerate these activities below as they relate to specific action items.

4. A major success for the PSMIP has been the transition of the oversight of programs at various stages of planning and execution. The formal initiation of dialogue on best practices is another example of progress. A third example was

the completion of the DIMES report, which was a consensus report that was shared directly with both the program manager and the PIs.

5. We feel that the PSMIP goals are very responsive to the agency priority scientific areas. There may be room for additional balancing of process modeling and model improvement.
6. If there is one concern it might be the ability of this panel to fully engage the broader scientific community in its activities. We recognize the challenges associated with this interaction, which is the first step toward improving our visibility with members of the scientific community.

PSMI Panel 2005-2006 Goals, Action Items, and Activities:

Goal 1: Reduce major systematic errors and biases and uncertainties in GCMs used for climate variability prediction and climate change projection.

- Participate in Tropical Bias Meeting (Schopf, Large, Pan.), co-sponsor TB Workshop (Legler). *This meeting was held in Sept 2005. PSMIP members attended and reported back to panel on 9/16/2005. A followup meeting was held on June 23, 2006 to review experimental progress and to outline next steps. The next meeting is scheduled for February 2007. The panel will continue to monitor this activity through the participation of several panel members.*
- Initiate Tropical Bias working group, develop TOR, resource request (Schopf, Large, Sperber, Pan,...). *According to a PSMIP report dated 9/16/2005 "The consensus of the gathering was that a working group was not needed, that the effort is underway, CLIVAR PSMIP is intimately involved through 3 members (and CLIVAR more generally through Ben Kirtman, Wayne Higgins, Jim Carton). It was suggested that we change this action item to be "Encourage, support and foster community activities in reducing tropical biases." The panel agreed to this.*
- Initiate Subseasonal working group, develop TOR, resource request (Waliser).
- Review Process Studies Sci&Impl plans, SSC review & responses; recommend action for progressing (VOCALS: Schopf, PUMP: Xie, AMI: Hack, DIMES: Ferrari) by Fall 2005; collect & distribute info (Cronin) by Sep 2005 *This has been the most labor intensive action item of the PSMIP. While the reviews were led by the identified point of contact, the entire panel provided comments. For DIMES, many members provided lengthy (and multiple) comments and a teleconference was held. PSMIP assessments were sent to the IAG for VOCALS on 12/5/2005, for PUMP on 2/7/06, and for DIMES on 6/7/2006. The VOCALS and PUMP assessments were also sent directly to the PUMP and VOCALS leadership. Permission was given to E. Itsweire to forward the DIMES assessment to the DIMES PIs.*

- Develop plans for reviewing CPTs (Legg, Ferrari). *A review was held in November 2005.*
- Encourage assessment of IPCC model errors through analysis of CMEP results and develop strategy for responding to results (Legg)

Goal 2: Use process studies to quantify climatically important processes and to provide guidance for extending long-term in situ and satellite observations

- Compile feedback for OceanSITES group (all) by Feb 2006
- Compile assessments of satellite and remote sensing products (all) by Summit 2006
- Establish connection with NASA and NPOESS to enhance opportunities for constructive observing system design

Goal 3: Ensure that process studies lead to climate model improvements

- CPT review (Legg, Ferrari) by Fall 2005. *Done in November 2005.*
- Review modeling activity in funded process studies (EPIC, KESS: Xie, Cronin; CLIMODE: Xie, Joyce; NAME, MESA: Johnson, Sperber) by Summit2006
- Compile master list of climatologically important process studies and integrated data sets that can be used for model development activities (Legg, Cronin) by Summit2006. *Legg has begun compiling the master list. Cathy Stephens has been working with Cronin to develop and improve the US CLIVAR process study webpages.*
- Develop strategy for facilitating infrastructure, especially manpower resources, for model development activities (Large, Pan, Schopf, Hack, Legg, ...) by Summit 2006 *This was discussed at the GFDL meeting in September 2005. Several panel members also participated in a two-week NCAR ASP colloquium on utilizing climate models as a research tool. Over thirty graduate students attended this colloquium.*
- *On 10/6/2005, Eric Chassignet and collaborators sent an Open Letter to the PSMI panel proposing a Working Group for Ocean Model Development.*
- *In preparation for the AMS Townhall, the panel developed the concept of a "Best Practices for Process Studies".*

Goal 4: Facilitate collaborations with other national and international partners such as international CLIVAR, GEWEX, OCCC.

- Meet with IAG for planning PSMIP activities (Schopf, Cronin) by Feb 2006. *Schopf and other panel co-chairs met with IAG in December 2006.*
- Participate in AMS Town Hall Meeting (Cronin, Schopf) Jan 2006. *The panel was actively involved in the preparation for this and several panel members participated. Cronin presented PSMIP goals and introduced the concept of "Best practices for process studies".*
- Contribute text to BAMS article on US CLIVAR PSMIP goals and activities (Cronin, Schopf et al) by Spring 2006

- Determine potential for collaboration/coordination of process studies (OCCC: Cronin, Joyce, GEWEX: Sperber) by Fall 2005
- Initiate joint CLIVAR/GEWEX WG on Diurnal Cycle of Convection, develop TOR, request for resources (Sperber) by Summit2006. ***This became an action item for the CLIVAR project office.***

Addendum:

Meetings where US CLIVAR/PSMIP has been described through presentations:

- * KESS PI workshop, Sep 2005, URI, Narragansett, RI (Cronin)
- * AMS Townhall, Jan 2006, Atlanta GA (Cronin, Schopf, Hack, Xie, Pan, ... ?)
- * Ocean Model Metrics Workshop, Feb. 2006, Honolulu HI (Cronin, Large)
- * Tropical Bias Meeting, Sep 2005 (Schopf, Large, ...?)