

U.S. CLIVAR Panels and Working Groups

U.S. CLIVAR Committee

The inter-agency group has appointed a Committee (USC) to advise on implementing the U.S. effort in CLIVAR. This committee consists of the panel co-chairs from the current panels as well as four at-large members. See <http://www.usclivar.org> for more details.

R. Weller (chair) Woods Hole Oceanographic Institution, Woods Hole, MA, USA

J. McCreary, Univ. Hawaii, Honolulu, HI, USA

K. Kelly Univ. Washington, Seattle, WA, USA

M. Hoerling, NOAA CDC, Boulder, CO, USA

L. Goddard IRI, Palisades, NY, USA

A. Hall, UCLA, Los Angeles, CA, USA

M. Cronin, NOAA PMEL, Seattle, WA, USA

J. Hack, NCAR, Boulder, CO, USA

J. Marshall, MIT, Cambridge, MA, USA

S. Nigam, Univ. Maryland, College Park, MD, USA

Contact: David Legler , 1717 Pennsylvania Ave NW, Suite 250, Washington DC 20006, USA

Committee Terms of Reference

1. Provide overall scientific and programmatic guidance to ensure that US CLIVAR progresses towards achieving its scientific objectives using individual experts or expert groups as necessary
 2. Develop and update as needed an implementation strategy to prioritize and sequence US CLIVAR activities, and comment on agency implementation of the US CLIVAR Program;
 3. Promote balance within the various elements (theory, modeling, empirical studies, long-term observations and field campaigns) of the program and identify scientific gaps;
 4. Ensure that US CLIVAR activities are coordinated with international CLIVAR activities and other US GCRP elements;
 5. Provide oversight and coordination of, and guidance to US CLIVAR working groups;
 6. Provide advice for and implement, in consultation with other advisory bodies, effective transition of sustained observations initiated during CLIVAR to operational entities after they have demonstrated their usefulness for climate predictions;
 7. Keep the NRC/CRC appraised of the status of US CLIVAR, and acts as US liaison to the International CLIVAR SSG;
 8. Provide oversight of and guidance to the US CLIVAR Project Office.
-

Predictability, Predictions and Applications Panel

The PPAI panel's mission is to foster improved practices in the provision, validation and uses of climate information and forecasts coordinated participation within the U.S. and international climate science and applications communities.

L. Goddard (co-chair, IRI) Goddard@iri.columbia.edu

A. Hall (co-chair, UCLA) alexhall@atmos.ucla.edu

T. Delworth (GFDL) Tom.Delworth@noaa.gov

W. Higgins (NCEP) Wayne.Higgins@noaa.gov

B. Kirtman (COLA) kirtman@cola.iges.org

R. Koster (GSFC), randal.koster@gsfc.nasa.gov

N. Mantua (U. Washington) mantua@atmos.washington.edu

S. Mason (IRI) simon@iri.columbia.edu

G. Meehl (NCAR) meehl@ucar.edu

K. Redmond (Desert Research Inst.) krwrcc@dri.edu

G. Schmidt (GISS) gschmidt@giss.nasa.gov

PPAI Terms of Reference

1. Review, prioritize, and coordinate US 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.
2. Interface with agency and CCSP 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.
3. Coordinate US efforts to insure advances in prediction research have appropriate connections and pathways into operational forecast system development.
4. Develop and encourage mechanisms (e.g. community workshops, commissioned studies, Working Groups) to further the development and implementation of a research strategy, including filling gaps. Advise on the adequacy and effectiveness of Working Group plans and their implementation.
5. Advise US CLIVAR on research priorities, identify research gaps, and develop suitable milestones to promote funding opportunities. Help foster and coordinate joint agency participation and support of relevant activities.
6. Publicize accomplishments and demonstrated progress in research leading to improved prediction capabilities and applications of prediction information.
7. Coordinate with other national and international activities to develop integrated, efficient, and effective overall international plans and activities.
8. Liaise with other US CLIVAR panels and Working Groups to insure prediction is considered in their efforts.

PPAI Goals

1. Further fundamental understanding of climate predictability at seasonal to centennial time scales

- Develop and promote standard metrics and practices for evaluating predictability and prediction
- Encourage coordinated U.S. participation in emerging international multi-model prediction and attribution activities
- Quantify prediction uncertainty and its sources
- Assess predictability of key climate forcings

2. Improve provision of climate forecast information, particularly with respect to drought and other extreme events

- Assess baseline predictability of drought on weeks to decades.
- Coordinate and “advertise” scientific support for multi-agency research efforts that address local and remote sea-air-land mechanisms of drought and its predictability, at interannual to decadal timescales (joint with GEWEX)
- Assess possible future changes in drought
- Identify/collect/document monsoon indices to observe and predict (help from POSP)
- Assess baseline simulation capability of complete annual cycle of global monsoon and its variability, including diurnal component (help from PSMIP)
- Assess baseline predictability of identified monsoon indices
- Quantify relative roles of ocean/atmosphere and land/atmosphere processes (with POSP & PSMIP)
- Assess potential future changes of global monsoons

3. Foster research and development of prediction systems for climate impacts on ecosystems

- Improve understanding of oceanic and atmospheric patterns, and consequent forcing mechanisms, that organize ecosystems and determine the spatial and temporal distribution of water resources. (with PSMIP)
- Quantify the predictability of key oceanic and atmospheric processes that influence ecosystems and water resources.
- Develop tools for transforming climate forecasts into ecosystem and water resource forecasts at lead times from sub-seasonal to centennial and at appropriate spatial scales
- Develop ability to quantify relative contributions of anthropogenic climate change and natural climate variability to observed long-term changes in ecosystems and water resources

4. Enable use of CLIVAR science for improved decision support

- Develop integrated linkages to interdisciplinary programs: NOAA RISA and OGP, IRI, IPCC, CCSP, NASA efforts, NSF NEON / CUAHSI / CLEANR / ORION, Ocean Observing Systems, public entities such as WGA / NGA.
- Promote/support projects that link climate observations, forecasts, and scenarios with resource assessments and forecasts
- Promote sustained interactions with other disciplines and research communities to ensure delivery of “usable science”
- Emphasize spatial and temporal scales of information needed for applications. Contribute support for the development, use, interpretation, and evaluation of tools (e.g. downscaling) employed by applications.

ACTIVITIES IN SUPPORT OF GOALS (Next 1-3 years using only existing resources and leveraging)

GOAL 1

- Propose working group to assess current levels of predictability for seasonal-to-interannual climate
- Coordinate with WGSIP Standards Project to define best forecast practices
- Participate in the experimental design of the COPES-TFSP Seasonal Prediction Experiment to ensure US CLIVAR participation and representation
- Evaluation of current techniques and methodologies for forecasting decadal variability (10-30 year timescale)
- Evaluation of current techniques of coupled initialization for seasonal/interannual and decadal forecasting (coordinate with WOAPS)
- Evaluate patterns of decadal and climate change timescales (i.e. forced versus natural) and their relationships in the context of decadal forecasting and climate change detection/attribution (focused CMEP activity; analysis of natural versus anthropogenic forcings)
- Endorse and strongly recommend funding agency support for the next decadal variability workshop to address these issues (spring 2007; coordinate with Vikram Mehta)

GOAL 2

- Propose working group to facilitate the creation of a prototype National Drought Attribution and Prediction Consortium (joint with POS)
- Coordinate position papers (drawing from scientific and user community) on key drought-relevant issues including definition(s), measurement strategies, research gaps, and perceived model improvements necessary for improved simulation and prediction of drought.
- Document metrics of extreme weather and climate (e.g. temperature, precipitation, Frich et al. indices) (POSP)
- Assess model simulations of extremes and potential changes in extremes.
- Assess baseline predictability of extremes on sub-seasonal to seasonal timescales, including the characteristics of weather within climate (within CMEP activity for CCSP 3.3)
- Quantify connection between leading patterns of climate variability (e.g. ENSO, PDO, AAO, NAO, climate change) and weather extremes (joint with POSP); (within CMEP activity for CCSP 3.3)
- Propose working group to better understand and improve representation of diurnal variability in dynamical models
- Draw on and encourage work within NAME/MESA activities as well as Int'l CLIVAR monsoon WGs to meet sub-goals of assessing baselines and quantifying interactions between components of climate system (e.g. NAMAP2, NAME CPT, NAME Tier 3)
- Assess potential future changes of global monsoons (within CMEP activity)

GOAL 3

- Develop better understanding of ocean climate patterns, and consequent forcing mechanisms, that organize marine ecosystem response patterns (with PSMIP)
- Quantify the predictability of key ocean and climate processes that influence marine and terrestrial ecosystems of interest
- Nowcast current and hindcast retrospective oceanic conditions in an ecosystem context

(with POSP)

- Develop tools for extending seasonal/interannual lead time climate forecasts into S/I ecosystem forecasts at appropriate spatial scales
- Assess potential climate change impacts on ecosystems based on knowledge of forcing mechanisms
- Identify & distinguish mechanisms for change versus slow variability of climate affecting ocean and land ecosystems

GOAL 4

- US CLIVAR Applications Interface post-doctoral program
- Form proposal for post-doctoral program
- Identify participating institutions (e.g. RISAs, Natural Resource Management Institutions, EPA, DOT, FEMA, etc.)
- Design/develop web-based tool for user feedback on US CLIVAR funded (and related) science (together with USCO)
- Initiate compilation of perceived research priorities for sectoral decision making
- Develop database of US CLIVAR funded work (past & current) and associated published research
- Implement search and feedback function (much akin to Amazon.com)
- Coordinate and encourage multi-agency support for development of web-based information delivery and decision support tools

ACTIVITIES IN SUPPORT OF GOALS (Next 1-3 years using only existing resources and leveraging **and next 3-5 years and beyond)**

GOAL 1

- Coordinate with COPES Modeling Panel and the COPES-TFSP on the development of a unified days to decades prediction strategy to be implemented by 2015.
- Develop a Quasi-Regular process for the assessment of prediction skill
- Coordinate with WGCM and decadal variability community regarding regular assessment of simulations of 20th and 21st century climate, and long control runs, to understand relative roles of inherent versus forced variability and climate system response in the context of existing and new emissions scenarios in a focused CMEP context (e.g. new mitigation/adaptation scenarios)

GOAL 2

- Recommend metrics of extreme weather and climate for evaluating 20th century observations and model simulations, and future climate change projections (e.g. temperature, precipitation, Frich et al. indices) (joint with POSP)
- Assess model simulations of extremes and potential changes in extremes: (ongoing CMEP activity to perform analyses of AOGCM extremes for assessment activities of CCSP and IPCC)
- Assess baseline predictability of extremes on sub-seasonal to seasonal timescales, including the characteristics of weather within climate: (ongoing CMEP activity)
- Quantify connection between leading patterns of climate variability and weather extremes (joint with POSP): (ongoing CMEP activity)

GOAL 4

- US CLIVAR Applications Interface post-doctoral program
 - Promote and initiate program

- Coordinate annual meeting (say within CPASW) for post-doc reporting on results, experience, lessons learned, future plans
 - Web-based tool for user feedback on US CLIVAR funded (and related) science (together with USCO)
 - Promote tool to decision makers as well as researchers and program managers
 - Review feedback from ‘users’. Use to inform research priorities within US CLIVAR, and to update web tool.
 - Publish EOS or BAMS-type article on benefits and lessons provided by such a research-feedback tool
 - Coordinate and encourage multi-agency support for development of web-based information delivery and decision support tools
-

Process Studies & Model Improvement Panel

The PSMI panel's mission is to research underlying uncertainties in models and physics and to improve the delivery of climate science.

M. Cronin (co-chair, PMEL) Meghan.F.Cronin@noaa.gov

J. Hack (co-chair, NCAR) jhack@ucar.edu

R. Ferrari (MIT) rferrari@mit.edu

R. Johnson (Colo. St. Univ) Johnson@atmos.colostate.edu

T. Joyce (WHOI) tjoyce@whoi.edu

W. Large (NCAR) wily@ucar.edu

S. Legg (Princeton) Sonya.legg@noaa.gov

H.-L. Pan (NCEP) Hualu.Pan@noaa.gov

P. Schopf (GMU/COLA) schopf@scs.gmu.edu

K. Sperber (LLNL) sperber1@llnl.gov

S.-P. Xie (Univ. Hawaii) xie@soest.hawaii.edu

PSMI Terms of Reference

1. Review, prioritize, and coordinate US plans for relevant process studies, CPTs and other investigations that lead to improved parameterizations of critical climate processes, better quantification of climate model uncertainties, and improved climate model fidelity as necessary to achieve the goals of CLIVAR.
2. 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. Advise on the adequacy and effectiveness of Working Group plans and their implementation.
3. 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.
4. Advise US CLIVAR on research priorities, identify research gaps, and develop suitable milestones to promote funding opportunities. Help foster and coordinate joint agency participation and support of relevant activities.
5. Coordinate with other national and international activities to develop integrated, efficient, and effective overall international plans and activities.
6. Publicize accomplishments and demonstrated progress in understanding of critical processes, characterizing model uncertainty, and improving the fidelity of climate models and their subcomponents.
7. Liaise with other US CLIVAR panels and Working Groups to insure model process studies and model improvement needs are considered in their efforts.

PSMI Goals

1. **Reduce major systematic errors and biases in GCMs used for climate variability prediction and climate change projection**
 - Climate variability prediction includes subseasonal-to-decadal timescale prediction and simulations. Beyond decadal timescales, simulations must use uncertain forcings (e.g. for anthropogenic CO₂) and are described as projections. Systematic errors and biases of concern are those that exist in multiple climate models. Major errors are those which have a large impact on climate simulations. Established examples include: representation of stratocumulus, eastern ocean boundary SST, excessive cold tongue, double ITCZ, weak tropical variability, storm track placement and variations, and mid-latitude air-sea interaction.
2. **Use process studies to quantify climatically important processes and to provide guidance for extending long-term in situ and satellite observations**
 - In addition to their primary function of improving understanding of key processes, process studies should be designed to leave a continuing legacy for the overall climate observational record. This legacy can include: (a) guidance for placement of long-term sparse observing platforms; (b) calibration of satellite products, enabling extension of the climate record into the past through existing satellite data.
3. **Ensure that process studies lead to climate model improvement**
 - Many field programs explore climatically important processes, combining in situ and remote observations on a variety of scales. Combined with process models, these can develop understanding of the process. Our goal is to ensure that this understanding translates into improved climate GCMs. That may involve: consultation on process study design, recommendation for supplemental modeling and/or field activities, and guidance for climate process teams.
4. **Facilitate collaborations with other national and international partners such as international CLIVAR, GEWEX, OCCC.**
 - We welcome and value the opportunity to collaborate with other programs on modeling and observational activities of mutual interest and recognize that these opportunities can result in leveraged resources and added scientific benefits.

ACTIVITIES IN SUPPORT OF GOALS (Next 1-3 years using only existing resources and leveraging)

GOAL 1

- Encourage, support and foster community activities to reduce tropical biases.
- Co-sponsor workshop on [Tropical Biases](#)
- Initiate new working group on Subseasonal Variability
- Encourage assessment of IPCC model errors through analysis of CMEP results and develop strategy for responding to results

GOAL 2

- Provide feedback to OceanSITES group for sustained observations based upon process studies' findings
- Assessment of satellite and remote sensing products and feedback to satellite and remote sensing teams
- Establish connection with NASA and NPOESS to enhance opportunities for constructive

observing system design

GOAL 3

- CPT and CPT-like activities
- Ensure that appropriate modeling activities are included in process studies
- Compile master list of climatologically important process studies and integrated data sets that can be used for model development activities

GOAL 4

- Initiate a joint working group with GEWEX on diurnal cycle of convection and coordinate with existing diurnal cycle activities
- Panel advocacy
- Liaison and coordination of activities with partner programs

ACTIVITIES IN SUPPORT OF GOALS (Next 1-3 years using only existing resources and leveraging **and** next 3-5 years and beyond)

GOAL 1

- Identify additional areas of major systematic bias where new process studies are required to make progress (NOAA/NSF/NASA)
- Support process studies for understanding and reducing climatically important model errors and uncertainties. (NOAA/NSF/NASA)
- Support Climate Process Teams and CPT-like teams (NSF/NOAA)

GOAL 2

GOAL 3

- Facilitate infrastructure, especially manpower resources, (internal and external to modeling centers) for model development activities

GOAL 4

ACTION ITEMS in support of the above GOALS

GOAL 1

- Attend Tropical Bias Meeting (*Schopf, Large, Pan,*), co-sponsor TB Workshop (Legler), Sept 2005
- Initiate Subseasonal working group, develop TOR, resource request (*Walliser*)
- 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
- Develop plans for reviewing CPTs (*Legg, Ferrari*)
- Encourage assessment of IPCC model errors through analysis of CMEP results and develop strategy for responding to results (*Legg*)

GOAL 2

- 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

- CPT review (Legg, Ferrari) by Fall 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
 - Develop strategy for facilitating infrastructure for model development activities (*Large, Pan, Schopf, Hack, Legg, ...*) by Summit2006

GOAL 4

- Meet with IAG for planning PSMIP activities (*Schopf, Cronin*) by Feb 2006
 - Participate in AMS Town Hall Meeting (*Cronin, Schopf*) Jan 2006
 - 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
-

Phenomena, Observations & Synthesis Panel

The POS panel's mission is to improve the understanding of climate variations in the past, present, and future; develop syntheses of critical climate parameters; and sustain/improve the global climate observational system.

S. Nigam (co-chair, U. Maryland) nigam@atmos.umd.edu

J. Marshall (co-chair, MIT) marshall@gulf.mit.edu

J. Carton, (U. Maryland) carton@atmos.umd.edu

D. Easterling (NCDC) David.Easterling@noaa.gov

S. Gille (Scripps Inst of Oceanography) sgille@ucsd.edu

D. Gutzler (Univ. New Mexico) gutzler@unm.edu

G. Lau (GFDL) Gabriel.lau@noaa.gov

D. Menemenlis (NASA-JPL) Dimitris.Menemenlis@jpl.nasa.gov

S. Schubert (GSFC) siegfried.schubert@gsfc.nasa.gov

E. Tziperman (Harvard) eli@eps.harvard.edu

M. Alexander (NOAA-CDC) Michael.Alexander@noaa.gov

Terms of Reference

1. Review, prioritize, and coordinate US 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.
2. 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.
3. Additionally, guide and assess efforts to extend the record of past climate variability through assembly of quality-controlled instrumental data sets & paleoclimatic data.
4. 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.
5. 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).
6. Develop and encourage mechanisms (e.g. community workshops, commissioned studies, Working Groups) to further the development and implementation of a research strategy, including filling gaps. Advise on the adequacy and effectiveness of Working Group plans and implementation.
7. Advise US CLIVAR on research priorities, identify research gaps, and develop suitable milestones to promote funding opportunities. Help foster and coordinate joint agency participation and support of relevant activities 7. Coordinate with other national and international activities to develop integrated, efficient, and effective overall international plans and activities.
8. Publicize accomplishments and demonstrated progress in contributing towards a sustained observational system, identifying and understanding critical observable coupled phenomena, and developing assimilation/synthesis capabilities of the coupled ocean-atmosphere-land

system.

9. Liaise with other US CLIVAR panels and Working Groups to insure relevant needs are considered in their efforts

POS Goals

1. Phenomena - Advance understanding of the structure and mechanisms of climate variability in the past, present and future. Priorities include:

- Climate Change: Detection, Attribution
- Regional hydroclimate variability: Droughts, Monsoons, Western Water
- Role of Tropical Oceans in Global Climate
- Climate variability modes (ENSO, PDV, TAV, NAO, Annular modes, MJO) and their interaction in 20th Century observations and simulations

2. Observations - Sustain and improve the Global Climate Observing System and the US Climate Reference Network

- Maintain continuity of satellite altimetry and climate data records
- Help achieve current deployment objectives (Aquarius, ARGO, hydrography, WSOA, GPM)
- Expand the US Climate Reference Network
- Help plan future observing systems: remote sensing of sea ice, observing system simulation experiments, sensitivity analysis

3. Synthesis - Improve and Develop consistent ocean-atmosphere-land data sets for climate studies: Climate Data Assimilation

- Reanalysis for climate studies (ocean, atmosphere, land, coupled)
- Large-scale synthesis of ocean and ocean-atmosphere observations (data only)
- Development of coupled data assimilation techniques

ACTIVITIES IN SUPPORT OF GOALS (Next 1-3 years using only existing resources and leveraging)

GOAL 1

- Arctic climate change analysis: International Polar Year activity; In collaboration with SEARCH & CLiC
- Origin of North American Droughts: Role of ocean-atmosphere .vs. land-atmosphere processes; CLIVAR-GEWEX coordinated research
- Role of Indian Ocean in global climate: Analysis; sampling strategies
- Pacific Decadal Variability
- Troposphere-Stratosphere interaction: CLIVAR-SPARC coordinated research
- Interaction of modes of climate variability in observations and models (e.g., IPCC simulations)
- Extreme weather and relation to climate change
- Climate change in the paleo record: Abrupt, 1K, 10K, 100K ...

GOAL 2

- Maintain continuity
 - Transitions (altimetry to NPOESS etc...)
 - Climate data records (SST, surface winds, altimetry,...)
 - Monitor high latitude processes - coordinate with IPY (2007-09), SEARCH, CLiC

- Achieve current deployment objectives
 - Argo array, flux buoys, hydrography
 - Satellites - Aquarius (salinity), WSOA (wide swath altimeter), GPM (Global Precipitation Mission), HYDROS (soil moisture)
 - Expand the US Climate Reference Network; modernize the US Historical Climatology Network
- Plan future observing system needs
 - Remote sensing of Sea ice parameters: thickness.....
 - OSSE's (Observing System Simulation Experiments) – e.g MOC
 - Sensitivity analysis, influential regions and variables

GOAL 3

- Reanalysis for climate studies (ocean, atmosphere, land, coupled).
 - Lessons from CLIVAR field programs
 - Emphasise improvement of surface fluxes
 - Assess impact of COSMIC data on reanalysis
- Large-scale synthesis of ocean and ocean/atmosphere observations (data only)
- Development of Coupled Data Assimilation techniques

ACTIVITIES IN SUPPORT OF GOALS (Next 1-3 years using only existing resources and leveraging **and** next 3-5 years and beyond)

GOAL 3

- Coupled reanalysis for Climate Studies
 - with emphasis on improvement of air-sea and atmosphere-land fluxes.
- Develop infrastructure for sustaining climate reanalyses
 - with links to carbon, biogeochemistry, ecosystems
- Analysis of synthesized data sets for studies of climate variability

ACTION ITEMS in support of the above GOALS

GOAL 1 - Phenomena

- Proposed AGU Session on the Role of Circulation in Region Hydroclimate Variability at the 2006 Spring meeting; to forge greater links between US CLIVAR and GEWEX
- Proposed working group on Droughts (with PPAI)
- Chapman Conference on Jets and Annular Modes (January 2006; Walter Robinson, Convenor)
- Proposed working group on Polar Climate (with PSMI)
- Spin up activities on Pacific Decadal Variability

GOAL 2 - Observations

- Provide input to NRC's Decadal survey on Satellite Observations (Sarah Gille)
- Monitor transitions of altimetry to NPOESS
- Lobby for Aquarius, WSOA, HYDROS
- Lobby in support of high-latitude process studies (e.g. DIMES)
- Coordinate with IPY (2007-09), SEARCH, CliC

GOAL 3 - Synthesis

- Develop roadmap/timeline and required resources for developing capabilities, data sets, infrastructure for reanalysis of atmosphere, ocean, ice, land, for climate applications
- Advocacy of synthesis plan

- Organize workshop on the coupled atmosphere-ocean assimilation/synthesis problem for climate
- Organize meetings of POS representatives with agencies – particularly NASA, NOAA and DOE.

GOAL 4 - Coordination and representation

- Other US panels; CLIVAR, e.g. TAV, AMMA
 - International CLIVAR; TACE; COPES/WOAP, etc...
-

Salinity Working Group

www.usclivar.org/Organization/SalinityWG.html

J. Carton, (co-chair, U.Maryland) carton@atmos.umd.edu

R. Schmitt (co-chair, WHOI) rschmitt@whoi.edu

T. Boyer (NODC) Tim.Boyer@noaa.gov

Y. Chao (NASA JPL) yi.chao@jpl.nasa.gov

A. Gordon (Columbia Univ./LDEO) agordon@ldeo.columbia.edu

G. Johnson (PMEL) Gregory.C.Johnson@noaa.gov

G. Lagerloef (ESR) lager@esr.org

W. Large (NCAR) wily@ucar.edu

S. Riser (Univ. Washington) riser@u.washington.edu

Terms of Reference

- Describe the role of ocean salinity in the global water cycle, global ocean circulation, and climate variability (including trends);
 - Identify the requirements and challenges for analyzing, observing, and monitoring salinity, as well as simulate processes critical for determining the ocean's role in transport and storage of salinity;
 - Provide guidance to NASA (and the international community) on observational and scientific activities that should be considered in advance of and during the Aquarius mission to improve our measurement, analysis, and utilization of salinity information for the purposes stated above
 - Report within one year to the U.S. CLIVAR Phenomena, Observation and Synthesis panel on the above objectives.
-

MJO Working Group

www.usclivar.org/Organization/MJO_WG.html

D. Waliser (co-chair, NASA-JPL) duane.waliser@jpl.nasa.gov

K. Sperber (co-chair, LLNL) sperber1@llnl.gov

L. Donner (GFDL) Leo.J.Donner@noaa.gov

E. Maloney (Oreg. St. Univ) Maloney@coas.oregonstate.edu

M. Moncrief (NCAR) monccrief@ucar.edu

S. Schubert (GSFC) siegfried.schubert@gsfc.nasa.gov

B. Wang (Univ. Hawaii) bwang@soest.hawaii.edu

W. Wang (NCEP) Wanqui.Wang@noaa.gov

K. Weickmann (NOAA CDC) Klaus.Weickmann@noaa.gov

C. Zhang (Univ. Miami) czhang@rsmas.miami.edu

Terms of Reference

- Develop a set of metrics to be used for assessing MJO simulation fidelity and forecast skill.
- Develop and coordinate model simulation and prediction experiments, in conjunction with model-data comparisons, which are designed to better understand the MJO and improve our model representations and forecasts of the MJO.
- Raise awareness of the potential utility of subseasonal and MJO forecasts in the context of the seamless suite of predictions.
- Help to coordinate MJO-related activities between national and international agencies and associated programmatic activities.
- Provide guidance to US CLIVAR and Interagency Group (IAG) on where additional modeling, analysis or observational resources are needed.