

Dear Panels,

As you know we will be investing some time at the upcoming US CLIVAR Summit to discuss possible new Themes, or compelling scientific challenges that broadly intersect our Panels; are "ready" for focused research attention (from agencies and in-kind involvement of investigators already funded); and coordinated activities (e.g. through US CLIVAR Working Groups). We are planning discussion time during the Summit to identify new Themes, their strengths, and their likely payoffs.

As part of this overall discussion/selection process we are asking the Panels to schedule time during their breakout meetings at the Summit to discuss ideas for new Themes. We're hoping that everyone is thinking about ideas for Themes. In preparation for these discussions, and to stimulate your own thinking, below we've listed some \*examples\* of potential Themes. These are by no means exhaustive nor are they meant to shut out other ideas...they are simply \*some\* ideas (some good and some perhaps not so good or too far outside the bounds of CLIVAR and its supporting agencies).

In thinking about Themes and what the term means, I've come up with a few possible criteria of Themes that we'll discuss in Annapolis:

- o Broad topical area/challenge of compelling coupled climate scientific research
- o Intersects activities and interests of two or more Panels
- \* Is of interest/within mandate or mission of CLIVAR agency programs
- o Remains a theme for a minimum of 3-5 years (sufficient time to allow Working Groups and new activities to bear fruit?)
- o Guided by a set of questions which will be addressed/assessed as a concluding theme action by US CLIVAR
- o Reflect readiness of community to address/answer to those questions through new and existing activities
- o Agencies have already funded some activities to be leveraged/coordinated; and/or agencies may be willing to support limited (?) new activities in this area
- o Strategic plans (motivation, scope, overview of strategic directions) are encapsulated in a 5-10 pg briefs

Other sources for themes: various USGCRP and National Academy Reports, colleagues, etc

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In summary, begin to start thinking about Themes in advance of the Summit. Bring your ideas and be prepared to discuss which Theme(s) US CLIVAR should adopt and move forward with.

Regards, David Legler

## EXISTING THEMES FOR US CLIVAR

1. Drought (continue to develop this existing theme)
  - cuts across all panels
  - decision-making context is high (NIDIS)
  - key issues are the role of oceans as early warning indicators, the role of land memory, GHG influences
  - initial DRICOMP science now being published.....what has been learned?
  - Upon synthesis of DRICOMP and Drought WG findings, formulate new foci.
2. Decadal Variability (existing theme....just launched)

## EXAMPLES OF POSSIBLE NEW THEMES

3. S/I Prediction of Tropical SSTs, including ENSO
  - cuts across all panels
  - decision making context is high (ENSO early warning/SI prediction by NOAA operations)
  - key issues are predictability of interannual tropical SSTs, factors that limit skill, the affect of GHG-SST change
  - need a synthesis of the current state of S/I predictability of tropical SSTs and ENSO.
  - need a comprehensive diagnosis of tropical SST fcst skill among the various models run for last 10-20 yrs.
4. Climate Analysis Data of the Earth System
  - especially POS, though impacts all panels

- significant gaps in global temperature monitoring.....Arctic/Antarctic, tropical continents virtually data void.
- validation of IPCC simulations of sfc/atmos trends in past 100yrs hindered by lack of global climate quality data
- assess the suitability of new/planned reanalysis data as climate-quality.
- assess data needs for ocean-atmosphere-land-ice analysis.

#### 5. Carbon cycle diagnosis/prediction

- all panels
- synthesis of what is known about the carbon cycle (how well is the carbon budget closed?)
- what factors drive regional and temporal variability of surface carbon fluxes?
  - the ocean's role in carbon uptake.
  - terrestrial sources of carbon (fires, deforestation)
  - model requirements

#### 6 Climate and ecosystems

#### 7 Extremes (perhaps a follow-on to droughts, decadal, precip, temp)

#### 8 Risk Assessment