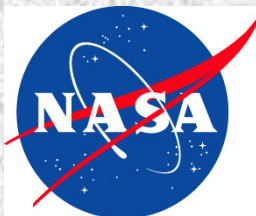


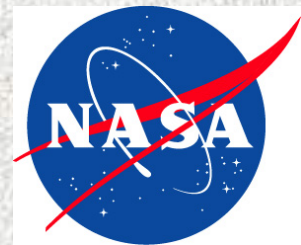
Agency Engagement

U.S. CLIVAR Summit
2012



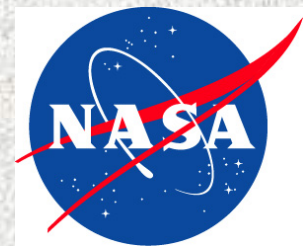
Relevant Agency Mission or Goals (unchanged)

- How is the global ocean circulation varying on interannual decadal, and longer time scales?
- What changes are occurring in the mass of the Earth's ice cover?
- How can climate variations induce changes in the global ocean circulation?
- How is global sea level affected by natural variability and human-induced change in the Earth system?
- How can predictions of climate variability and change be improved?



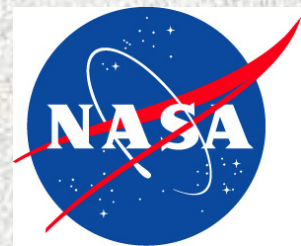
Supported US CLIVAR Activities Over the Past 3-4 Years

- Base support for US CLIVAR Office
- Ocean state estimation
- Decadal climate variability research/workshops
- Atlantic Meridional Overturning Circulation research
- Satellite altimetry (OSTM/Jason-2, OSTST)
- Aquarius/Ocean salinity science team (2011 launch)



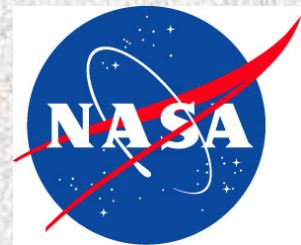
Top five long-range (~5-10 years) climate research areas of interest that intersect with CLIVAR

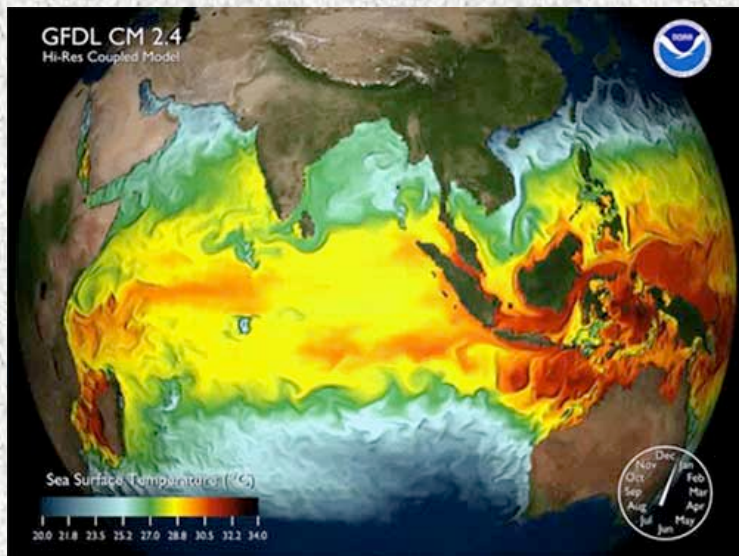
- End-to-end systems for climate prediction
- Understanding the role of slowly varying components of the earth system (e.g. ocean and ice) in climate (particularly sea level rise)
- Observing system development (esp. space-based technology)
- Atlantic Meridional Overturning Circulation (U.S. Ocean Research Priorities Plan)
- Decadal Climate Variability



Intangibles - How to Engage and Provide Value (continuing)

- PPAI - Climate/Decision Support interface
- PSMI - Process Improvement into ESMF, SPURS, ocean-ice sheet interaction,
- POS - Systematic measurements and development of climate data records, observing system priorities
- Map CLIVAR ambitions to agency goals, agendas, and priorities (can we carve CLIVAR into agency-friendly segments - the challenge continues)

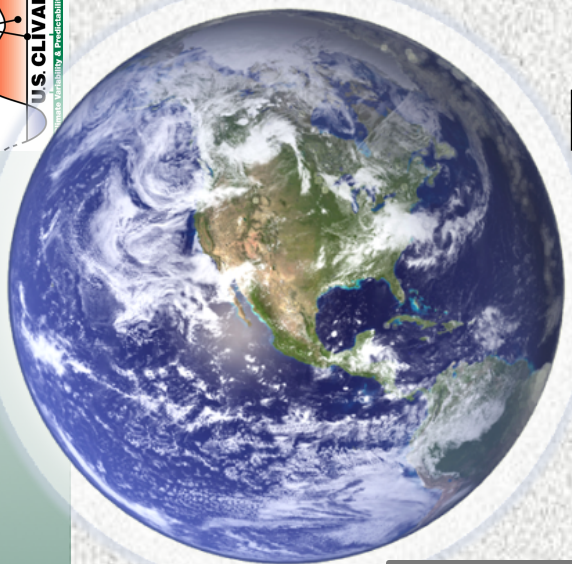




NOAA's Climate Interests

US CLIVAR Summit
Newport Beach, CA
July 17, 2012

Sandy Lucas
**Program Manager – Climate Variability and
Predictability Program**
NOAA Climate Program Office



NOAA's Vision, Mission, and Next Generation Strategic Plan (NGSP)

Developed through engagement with NOAA stakeholders and employees. Released: Dec 2010

NOAA's Mission: Science, Service, and Stewardship

Vision: Resilient Ecosystems, Communities, and Economies

NOAA's Goals:

- Climate Adaptation and Mitigation
- Weather-Ready Nation
- Healthy Oceans
- Resilient Coastal Communities and Economies

NOAA's Enterprise Objectives:

- Science & Technology Enterprise
- Engagement Enterprise
- Organization & Administration Enterprise

Read or download the plan: www.ppi.noaa.gov/ngsp/

Goal: Climate Adaptation and Mitigation

*An informed society
anticipating and responding
to climate and its impacts*



Objective 1: **Improved scientific understanding** of the changing climate system and its impacts

Objective 2: **Assessments** of current and future states of the climate system that identify potential impacts and inform science, service, and stewardship decisions

Objective 3: **Mitigation and adaptation efforts supported by sustained, reliable, and timely climate services**

Objective 4: A **climate-literate public** that understands its vulnerabilities to a changing climate and makes informed decisions

NOAA Climate Program Office

(www.cpo.noaa.gov/cpo_pa/)

Director, Chet Koblinsky (Note: Chet announced that he will retire on Aug 3, 2012)

- **Climate Observations and Monitoring (COM)** - designs, deploys, and maintains an integrated global network of oceanic and atmospheric observing instruments to produce continuous records and analyses of a range of ocean and atmosphere parameters. **Lead: David Legler**
- **Earth System Science (ESS)** - provides the process-level understanding of the climate system through observation, modeling, research analysis and field studies to support the development of improved climate models and predictions in support of NOAA's mission. **Lead: Jim Todd**
- **Modeling, Analysis, Predictions and Projections (MAPP)** – aims to enhance the Nation's capability to predict variability and changes in Earth's climate system; focusing on the coupling, integration, and application of Earth system models and analyses across NOAA, among partner agencies, and with the external research community. **Lead: Don Anderson**
- **Climate and Societal Interaction (CSI)** - provides national leadership in developing interdisciplinary science and services, including assessments, for application in climate-sensitive sectors and regions. **Lead: Roger Pulwarty.**

Supported US CLIVAR activities over past 3-4 years

Past and current successes:

- Process Studies
 - Past: EPIC, NAME, VOCALS
 - Current: DYNAMO, CPTs
- Modeling
 - CMEP 1 & 2, CMIP5
 - IASCLIP (Intra-Americas Study of Climate Processes)
- Ocean Observations
 - Argo

Future:

NOAA would like to see continued engagement and help coordinating with the research community

One example:

- Model-observation activities: feedback of modeling and research community on observing efficiencies and design (e.g., what mechanisms can provide feedback from models/assimilation systems to observing strategies and plans?)

Top five long-range (~5-10 years) climate research areas of interest that intersect with CLIVAR

- Predictability: Improving understanding of climate processes and Improving climate models
- Climate prediction and projection
- Climate re-analyses
- Sustaining and enhancing the ocean/Arctic climate observing system
- Information to support climate decision-making on a regional scale
- Climate Science-to-Service Thematic Areas: Water Resources/Droughts, Coastal Inundation/Sea Level Rise, Climate Extremes, Marine Ecosystems, and Information for Climate Policy Decision-makers

Intangibles - How to engage and provide value

US CLIVAR:

- Serves as a bridge between the research community and the Federal funding agencies
- Organizes/Coordinates the research community to establish the needs and requirements for future scientific advancement (and current gaps) and to express where additional resources are needed.
- Helps to organize the community after resources are allocated.
- Interests specific to NOAA: predictions/projections, intraseasonal to interannual predictability, decadal predictability, process studies, ocean observations

Examples (from Climate Observations):

- NOAA will continue to need updated requirements for observation systems (e.g. OOPC, GCOS mechanisms)
- NOAA will continue to look to the research community to initiate new observing activities (e.g., TAO, PIRATA, Argo arguably all emerged from research programs)
- NOAA will need support in the area of technology development (e.g., Argo)

How can CLIVAR engage with NOAA?

- Frequent contact with program leads would be helpful. (Email on website at Contact Us)
- Engaging program managers on a routine basis.
- Keep agency abreast of scientific gaps and community needs in the form of written reports and/or briefings to the agencies.
- Participate in webinars/seminar series at agency locations.

NOAA CPO FY13 Federal Funding Opportunity (FFO)

- It's likely that the FFO will be released later this month.
- There will be competitions under each of the CPO Programs.
- Please watch <http://www.cpo.noaa.gov/> for additional information on the FFO and the competitions for each CPO program.

Thank You

Sandy.Lucas@NOAA.gov
NOAA Climate Program Office



Relevant Agency Mission or Goals

- Advance discovery, knowledge and understanding in all areas of climate science – emphasis on transformative results
- Promote teaching, training, and learning in climate and related sciences – broaden participation of women and minorities in climate science
- Bring benefits to society through advancement in climate research



Supported US CLIVAR Activities Over the Past 3-4 Years

- CMIP5 Analyses and ocean reanalyses
 - 3 Climate Process Teams
 - Field Campaigns/Process Studies: DIMES, DYNAMO
 - AMOC/RAPID sustained observations and modeling
 - Year of Tropical Convection
-
- Related work: EaSM solicitations with DOE and USDA on decadal and regional modeling and predictions



Top long-range (~5-10 years) climate research areas of interest that intersect with CLIVAR

- Process understanding
- Predictability of the climate system on various time and space scales
- Climate extremes and coupling to extreme weather
- New observing techniques in ocean and atmosphere
- Sustainability Theme: System approach (e.g., EaSM)
 - Quantification of climate information uncertainties
 - Improved observations and modeling of climate forcing (e.g. aerosols)
 - Diagnostics and model improvement and evaluation (component and coupled models)
 - Unified modeling approach: weather-interannual-decadal time scales
 - High resolution climate models; “cloud resolving”, “eddy resolving”, Regional Climate Models, downscaling/upscaling, in general with more model components

Intangibles - How to Engage and Provide Value

- Identify a (small) set of critically important questions and the facilities and research required to address them. These need not be new, as long as they are critically important and limited not by ideas but by resources.
- U.S. CLIVAR should provide feedback on long-range scientific priorities
- Briefings to NSF Management to highlight CLIVAR achievements and new opportunities
- Always strive to represent the broader climate research community
- Activities, such as fostering the availability of tools and datasets, that enhance the productivity of investigators
- Providing information and fostering interactions that lead to the submission of stronger research proposals

