

## **Building a Climate Information System**

Kevin E Trenberth

National Center for Atmospheric Research

Box 3000, Boulder, CO 80307, USA

ph (303) 497 1318

fax (303) 497 1333

[trenbert@ucar.edu](mailto:trenbert@ucar.edu)

The climate is changing and human influences guarantee that it will continue to change for the foreseeable future. Consequently, adaptation to the coming changes must occur and the question is how much of the climate change impact will lead to loss of life and strife and how much will be planned and managed? Building resiliency and developing coping strategies for the forthcoming climate changes is essential, along with an information system. An outline will be given of what is needed as part of a climate information system, from the basic observations, their analysis, assimilation and assessment, and to modeling and prediction in order to provide decision makers with information for improved planning. The WCRP Observation and Assimilation Panel (WOAP), which I have chaired for the past 6 years or so, has promoted observations for climate; their use to establish the climate record, how the climate system works, and to improve and initialize models. A major part of this is to promote reprocessing of climate observations, especially from satellites, to create climate data records that can be used to say how the climate is changing and varying with confidence. A further major activity has been to promote reanalyses of the multivariate observations to produce the best available physically consistent record of the climate. A number of reprocessing activities are now underway, led in part by the GEWEX Radiation Panel, and many reanalyses now exist, so that also needed is an assessment activity that provides information about datasets, their strengths and shortcomings.