

**External Advisory Board Meeting  
of the  
Cooperative Institute for Climate Science  
Draft Report  
November 9, 2005**



# Cooperative Institute for Climate Science (CICS)

## Draft Report

First meeting of the External Advisory Board Meeting held at Princeton on November 9, 2005.

### Background

The first meeting of the External Advisory Board (EAB) of the Princeton Cooperative Institute for Climate Science (CICS) was held on November 9, 2005 in Sayre Hall, Forrestal Campus (parts of the afternoon session were held at GFDL). The EAB members in attendance included Ants Leetma, A.R. Ravishankara, and Peter Schlosser. EAB members Jeffrey Kiehl, Chester Koblinsky, and David Schimel were unable to attend the meeting.

Besides the typical function of EAB meetings, the November 9, 2005 meeting also addressed items of possible relevance for the upcoming external review of CICS on January 18, 2006.

### Meeting structure

The structure of the meeting provided for several blocks of presentations by CICS Executive Board members and CICS PI's, as well as for discussion rounds with the director, the executive board, and PI groups. Details can be taken from the agenda of the meeting (Appendix I). The presentations and discussions, together with the material provided to the EAB members in form of a briefing book portrayed a rich portfolio of activities in all four major research areas underpinning CICS: (1) Earth System Studies, (2) Biogeochemistry, (3) Coastal Processes, and (4) Paleoclimate. The meeting was kept to one day.

### Discussion topics and recommendations

Most of the discussion during the meeting evolved around the following topics. The EAB members present at the meeting felt that these were also the areas which could benefit from some further thought before the external review in January 2006. The recommendations are included in the discussion topics listed below:

- (1) **Vision:** The vision of CICS is *'to be a world leader in understanding and predicting climate and the coevolution of society and the environment – integrating physical, chemical, biological, technological, economical, social, and ethical dimensions, and in educating the next generations to deal with the increasing complexity of these issues'*. This statement is very ambitious (in a positive sense), forward-looking, and integrative. It will most likely provide a valid guiding vision for many years to come. Especially the element dealing with co-evolution of society and environment is of interest to NOAA. At the same time such a broad vision challenges CICS to fully integrate its present core directions which are mostly aligned along physical and biogeochemical sciences and to add technological, socioeconomic, and ethical dimensions. The latter can be achieved by either extrapolating the existing research foci into the engineering and socioeconomic domains or by adding new research foci that would concentrate on these dimensions and reach across the exiting 4 research concentrations. The Princeton Environmental Institute (PEI) potentially can play a critical role in achieving this task. The EAB feels that CICS addresses these issues as early

as possible in its further development. The present structure of CICS can not address the goals laid out in the vision statement in full depth and breadth. It requires contributions from the academic community of Princeton University as a whole. In principle, the PEI can be seen as a window to the Princeton University community at large.

- (2) **Role of PEI:** Related to point (1), the EAB discussed the role of the Princeton Environmental Institute (PEI) in CICS. In principal, the PEI should have much to offer in extending the mostly physical-science based research in CICS into the socioeconomic, engineering and public health domains. However, it was not quite clear how exactly such an extension would occur (which mechanisms for intellectual exchange are presently in place, etc.). CICS should engage in discussions with PEI on how to create the means for joint activities that would lead to better integration of engineering, social sciences, and public health into CICS activities. Possible means are seminar series on intrinsically interdisciplinary topics or definition of problems that require inclusion of social sciences, engineering, etc. to solve them.
- (3) **Uniqueness factor:** Given the fairly broadly formulated vision statement which (not surprisingly) is somewhat similar to statements of other centers/institutions addressing climate and environmental change problems and the interaction with society. Thus, a more specific statement of where the foci of CICS will be (in the interdisciplinary research programs) would help to better define the uniqueness of CICS vis a vis other cooperative institutes and in more general terms.
- (4) **Added value:** The EAB felt that a stronger case could be made for the value that is added to the research at Princeton through the formation of CICS. There are implicit statements to this effect, but a stronger explicit statement would add strength to the justification of CICS.
- (5) **Uniform message:** The EAB noted some differences in how individual CICS members view the cooperative institute. Whereas some of this is simply a natural phenomenon it might in part reflect some lack of definition of the common goals at this early stage of the development of CICS.
- (6) **Paleoclimate Research Theme:** The EAB noted that the Paleoclimate research theme has not yet been formulated to the point where its impact on modern climate studies and understanding of possible future climate scenarios becomes clear. A more concise formulation of the plans for the paleo research theme would be advantageous for CICS. In addition, the paleoclimate theme has not been placed into the context of paleo work presently underway in other cooperative institutes. Obvious synergy can be gained by synchronizing the CICS paleo studies with those being performed within CICAR which also cooperates with GFDL.
- (7) **Atmospheric Research:** The need for expertise in air quality and its impact on radiative forcing of climate came up during the discussion. The EAB felt that the expertise in this area which is important for Earth System Modeling should be examined and possibly expanded.

- (8) **Modeling capability:** Two specific items were discussed with respect to the climate modeling activities: (i) the need for a land modeler (at GFDL), and (2) the need for a coarse resolution model for long paleo runs.
- (9) **Growth areas:** During the presentations, coastal ocean studies and ecosystem management were mentioned as possible growth areas. However, it has not been stated convincingly in the documentation of CICS why this is the case.
- (10) **Support from Princeton University:** The EAB felt that an explicit expression of support for CICS from the central administration of Princeton University would strengthen the position of CICS within and outside the University.

## Appendix I: Agenda

# EXTERNAL ADVISORY BOARD MEETING AGENDA

Wednesday, November 9th

**8:30 - 9:00 Breakfast**

**9:00 – 10:00 Introduction and Overview** –Jorge Sarmiento, CICS Director

**10:00 – 11:00 Vision – Role of CICS**

- GFDL – Ants Leetmaa
- AOS (Visiting Scientist Program/Students) – Philander/Held
- PEI/PCC – Steve Pacala (including teacher training)
- CICS – Jorge Sarmiento
- Princeton – tbd

**11:00 – 11:30 Coffee Break**

**11:30 - 2:30 Science Discussion I (S. Pacala, Chair)**

**Theme 2 (Biogeochemistry) and Theme 4 (Paleoclimate)**

- **Goals and Highlights** (1 hr)
  - Biogeochemistry – Gnanadesikan
  - Paleoclimate – Sigman
  - Workshops: Philander, Oppenheimer, Sarmiento
- **Poster session and lunch** (1 hr)
- **Executive session and discussion with research leaders** (1 hr)

**2:30 – 5:30 Science Discussion II (I. Held, Chair)**

**Theme 1 (Earth Systems Studies/Climate Research) and Theme 3 (Coastal Processes)**

- **Goals and Highlights** (1 hr)
  - Climate – Held
  - Oceans and Coastal – Legg
  - Atmospheric Chemistry & Radiative Forcing – Ramaswamy
- **Poster session and coffee break** (1 hr)
- **Executive session and discussion research leaders** (1 hr)

**7:00 – 9:00 External Advisory Board Working dinner**

Thursday, November 10<sup>th</sup>

**8:30 - 12:00 External Advisory Board Executive Session**

Report writing/deliberations/discuss findings with CICS Director