**Expected products from the panel**

We understand that our immediate task is to work with the SEARCH community to review the implementation strategy and write a document that includes priorities and implementation strategies that can guide agencies in their preparation for announcements of opportunity in time to contribute to the international polar year.

We also understand that the probable focus of the IPY SEARCH agency initiatives will be on the observation component of SEARCH. As a panel we are therefore focusing on the relationship between people interacting with the system-scale changes presently seen in the Arctic and the observation component of SEARCH.

We are less certain about the longer range charge to the panel. We assume that the intent is that the IPY initiatives will serve as a catalyst for a more comprehensive implementation of SEARCH. We are therefore thinking in terms of how best to develop an ongoing relationship with the population groups responding to these system-scale changes.

The immediate task of setting priorities and implementation strategies for the contribution of SEARCH to IPY is likely to take place over the next several months. We are assuming, and will seek clarification, that the panel’s current membership will work to further implement SEARCH over the next several years.

**What is Meant by System-Scale Changes?**

We generally understand the difference between cyclical changes and secular trends. We understand that the initial hypothesis of a strong linkage between the cyclical changes in the arctic oscillation and the secular trend does not appear to be holding up. We are unclear how to describe the system-scale changes beyond the secular trends. Is the intent of SEARCH to use an understanding of the system-scale changes to improve our ability to predict annual to decadal changes that take into account cyclical changes?

**Observations Relevant to the Choice of General Approach to the Work of the Panel**

- People are keenly interested in predictions that are relevant to their daily lives.
- What is being predicted matters. If the predictions are developed without the involvement of the people for whom the predictions are intended to help, the people are likely to find the predictions flawed or irrelevant. Nate Mantua, for example, said that a climate impact assessment group in the Pacific Northwest developed their own predictions and later found that the intended user groups did not think the predictions were useful.
- People are aware of multiple changes. They want to know how these changes will all stack up to affect their lives (and their grandchildren’s lives) as a whole.
- What people are responding to varies by region and even by community. If we aren’t explicit about the changes we are talking about, the whole idea of responding to change gets too abstract for people to handle. We should therefore
start with clusters of closely related changes, recognizing that it will take time to build a comprehensive view.

**General Approach**

- Engage people who are responding to changes in SEARCH from the beginning. Under this paradigm, people would be involved in the following questions relevant to SEARCH, “What are you observing that you would like to know more about? What data do you think would be helpful? What data could you collect if you had the necessary resources? What do you make of these results? What would you look at to advance our understanding of what is happening? What changes do you anticipate? What are you doing in anticipation of change? Here are research predictions we think are relevant to your responses, tell us what you think.”

- Engagement of people takes time to set up and an investment to keep it going. Face-to-face contact, for example, is critical. Web sites and other technology can be very helpful, but they cannot substitute for face-to-face contact.

- Focus on the ability to predict changes that map onto decisions that people make every year (we understand we have a lot research to do before predictions can even be attempted).

- Build research designs around clusters of related changes. For example, some communities are dependent primarily on migratory species; others are dependent on resident species. Some depend primarily on ocean or river ice for transportation; others do not. Some are vulnerable to erosion; others are not. It could be useful to facilitate connections between groups of people in similar situations who are disconnected because of geographic or political boundaries. This probably means starting with a physical change relevant to one or more of these clusters of related changes. The focus would be on decisions of a group of people dealing with one of these clusters (e.g. decisions of seal hunters in the face of changes in near shore sea ice conditions). It may also mean starting with one region, or a group of communities in several regions that face similar decisions, and then scaling up by adding more regions or more communities.

- Observations are critical to building our understanding of the arctic system and ultimately to our ability to predict changes. Relevant observations include not only changes in the physical system, but also changes in the natural system and the human system. Clusters of related changes include people’s responses to changes (or anticipated changes) in the natural and physical environment. We therefore need to build observations of human responses into the observation system.

- Take advantage of prior work. For example, build on the work of the Regional Integrated Sciences and Assessments (RISA) program (see [http://www.opp.noaa.gov/mpe/csi/events/risa_021804/index.html](http://www.opp.noaa.gov/mpe/csi/events/risa_021804/index.html)). Here is an extract of a 2004 RISA workshop report:

  **What is Effective Decision Support?**

  Useful decision support from the scientific community has a number of characteristics, including:

  - information focuses on a critical societal issue, providing more than a state-of-the knowledge assessment
  - information answers specific questions identified by stakeholders
• information is provided in a timely fashion, fitting into the timeframe of the decision-maker
• information is directly relevant in form and content to the decision at hand, reflecting an understanding of the decision context
• information is communicated in accessible language and formats
• information includes an evaluation of the degree of uncertainty, limitations in scientific understanding, and the confidence in the results provided
• research products are the result of close science-stakeholder interaction

As Susan Avery (Director of CIRES, University of Colorado) suggested at the workshop, developing effective partnerships to provide effective decision support requires effort, including a significant investment of time, a commitment to sustained communication and follow-up to meet user expectations.

**Implementing Our Approach**

• Once we confirm our consensus on the above points, we work as a panel on an exercise to implement the approach using a concrete example.
• Based on the results of the exercise, refine our general approach.
• Work toward a good match between the components of the observation system likely to be implemented in the SEARCH IPY initiative and the most relevant clusters of related changes and associated population groups. Base priorities on this match.

**Exercise**

• Choose an example that makes the best use of the collective expertise of the panel. We recognize that ultimately the panel will need to draw on additional expertise to address the scope of relevant changes in SEARCH.
• Exercise choice: interactions between changes in sea ice, marine mammal populations, and marine mammal hunting in the eastern Bering Sea region.