

## Discussion Points on AISS

David Holland, June 2007

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### 1. Disciplinary Integration

An approach to Antarctic science that advocates integration of specific disciplines (e.g., meteorology, oceanography, glaciology, geophysics, geochemistry, geology, biology) for the purpose of tackling system science questions that obviously fall outside the scope of any one discipline is a timely idea for Antarctic natural science. There presently exist a number of science problems that either fall between the cracks between disciplines or span disciplines, for which no one particular discipline takes responsibility, with the outcome being that the problem does not get adequately addressed.

### 2 Global Geographic Integration

The Antarctic system is intimately connected to the global climate system. While AISS should have a focus on the Antarctic region, having a program that only has a geographical view of the Antarctic region would be unsatisfactory.

### 3 Long Temporal Integration

A shortcoming, to some extent, with existing Antarctic science is the difficulty in establishing longer time series observations, for example over a decade period. A systems science program could specifically promote and support projects that seek to establish long time baseline observations.

### 4 Societal Integration

While there are no indigenous peoples in the Antarctic, there is nonetheless a compelling human dimension to Antarctic science. The human impact lies in the physical connectivity of the Antarctic to the rest of the planet.

### 5 Problem-Oriented Interdisciplinary Science

There are specific problems in Antarctic science that are clearly interdisciplinary. Three examples are studies of the ozone layer, carbon uptake, and sea level. A system science program that takes on specific and pressing problems, as opposed to being open to all system science problems, could be both relevant and productive.

### 6 Other Agents On Board

At this spin-up stage, it would be useful to build partnerships with other agents that have a stake or concern in the Antarctic region. This could include government agencies such as NOAA, ONR, and DOE, as well as advisory bodies such as the NRC. Private foundations may also have an interest in partnering.

### 7 Personnel/Infrastructure Support

A system science initiative will need personnel support, in terms of a dedicated program manager, but also infrastructure support in terms of equipment needed to reach targeted objectives. This might take the form of an Antarctic Observing Network. While a new initiative needs new support, it should not detract from the support now in place for ongoing (and still much needed) basic discipline-based natural science.