

## **IPY 2012 *From Knowledge to Action* Conference**

**The following topics are proposed for the presentation of polar science highlights, synthesis and integration. Please let us know if you have other suggestions for interdisciplinary presentations of polar science. Although we will attempt to be as inclusive as possible, the final number of sessions for science presentations will be between 20 and 25. Submitting a session topic will not be a guarantee that the session will be included in the final program.**

### **Polar regions and linkages to global systems and beyond**

- earth structure and geodynamics at the poles
- polar ocean processes
- global impacts of a changing cryosphere, including ice sheets, sea level and methane release from permafrost
- polar processes and global biogeochemical cycles
- teleconnections and modes of polar climatic variability
- human dimension of globalization in polar regions

### **Past, present and future changes in the polar regions**

- past, present and future polar climate change
- atmospheric, physical and chemical processes in the polar regions
- evolving coastal near-shore and shelf processes in polar regions
- diminishing snow and ice
- frozen ground
- environmental consequences of change
- indigenous and local knowledge and polar science
- communities and change – vulnerability and resilience

### **Polar ecosystems, biodiversity and effects of human activities**

- polar terrestrial and freshwater ecosystems: status and change
- polar marine ecosystems: status and change
- polar microbes, genetics, and molecular biology
- contaminants in polar environments
- biodiversity and the link between science and policy

### **Human dimension of changes: health, society, culture and resources**

- natural resource exploration, exploitation and commercial activities including tourism
- adaptation and mitigation from community perspectives
- Arctic and Antarctic archaeology, cultural heritage sites and conservation
- human health and well-being, including food security in a changing Arctic
- governance and management challenges in the face of change

### **New frontiers, technologies and data practices in polar research**

- astronomy and astrophysics
- earth – solar interactions
- polar observing systems, including observations from space
- advances in technology in polar research, including subglacial exploration
- accessing, sharing and preserving data as an IPY legacy
- improved projections and forecast from climate and weather models