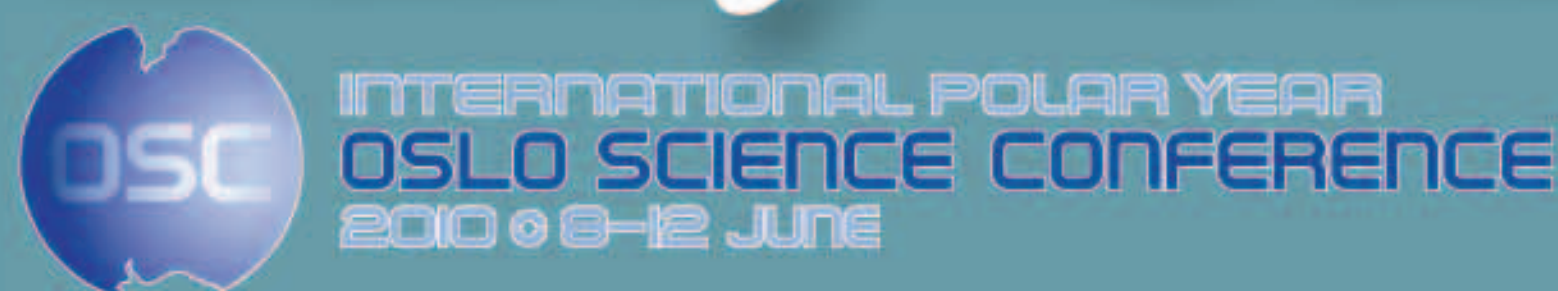


# A Symposium for Early Career Scientists



Activities developed within The 2nd International Symposium of Polar Scientific Research, IPY 2007-2008, and The European Polar Research Icebreaker „Aurora Borealis” FP7 Project, organized by Romanian Polar Research Institute (RPRI) Bucharest under auspices of Romanian Academy, 16-17 November 2007.

The symposium highlighted the importance of polar research within the world efforts to preserve natural resources and biodiversity and to mitigate the climate change consequences on polar ecosystems. The Symposium sessions were:

- I. Workshop on European Polar Research Icebreaker „Aurora Borealis” FP7 Project, coordinator „Alfred Wegener” Polar and Marine Research Institute, Germany, 14 papers;
- II. Structuring an Integrated International Cooperation Research on Polar Ecosystem Biodiversity, Response to Environmental Changes and Applications, coordinator RPRI, 16 papers;
- III. Promotion of International Cooperation Research on Psychrophilic Microorganism Potential in Bioremediation, coordinator RPRI, 14 papers;
- IV. Promotion within an International Partnership of Biomedical Research under Extreme Life Conditions, coordinator Romanian Academy Virology Institute, Bucharest, 21 papers.

These sessions involved many early career scientists, and 85 specialists in most different research fields, 14 of which researchers in nine EU States: France (by the ESF representative, Director Dr. Paul Egerton), Germany, Belgium, Austria, Italy, Estonia, Czech Republic, Greece, Bulgaria; and Russian Federation. 19 Romanian institutions participated in the Symposium.

Romanian polar research prospects were mentioned in European framework (the competition in European Framework Program FP7 etc.) and the International Polar Year 2007-2008.

Dr. T.Gh. Negoita, Director of RPRI, presented the document „Developing a South-eastern-Central European Action Plan for Polar Programs and Infrastructures”, elaborated in collaboration by Romania, ESF and other countries which intend to participate in this regional agreement. Among this plan priorities: A stronger collaboration between national polar programs; Encouraging the innovative young researchers; research stages for Ph.D students in polar areas; Access to polar infrastructures.

The symposium communications and discussions resulted in the identification of 9 interest fields for future research/cooperation.

Fields of interest for future research and cooperation (national/international) identified in The 2nd International Symposium of Polar Scientific Research, IPY 2007-2009, and The European Polar Research Icebreaker „Aurora Borealis” FP7 Project:

Ref. No.	Field of interest	Investigation areas:
1	<b>Paleoceanography &amp; Paleoclimate</b> 1. Marine environmental, sedimentological history and evolution 2. Paleo-environmental studies 3. Carbon sink in the Arctic and Southern Oceans	Arctic and Antarctic Oceans, coasts included
2	<b>Sea-Ice System</b> 1. Growth/accumulation of microalgae in different types of sea ice 2. Contribution of microbial communities to remineralization of organic matter in the ice 3. The role of the sea ecosystem in matter transport to higher trophic levels 4. Ice evolution study	All seas around Antarctica, all polar seas
3	<b>Oceanography</b> a) Marine environmental, sedimentological structures and evolution b) Possible Romanian contributions to the AURORA BOREALIS Icebreaker design and construction	Antarctic and Arctic Seas and Oceans
4	<b>Geology and geophysics</b>	Arctic Ocean gateways and continental margins
5	<b>Polar Ecosystems – biodiversity, adaptation and impact of climate change</b> 1. Arctic and Southern oceans ecosystems 2. Marine Microbiology (sea ice, marine/terrestrial/coast aquatic ecosystems) Microorganisms and viruses - <i>In-situ</i> detection and monitoring of microorganism biodiversity, abundance and activity by molecular biology and genomic techniques - Micro-niches sustaining microorganism symbiotic consortia in the ocean, marine sediments and extreme environments - Stress adaptation mechanisms of microbial psychrophiles (as models of adaptation and survival, and analogues of life on other planets in <i>astrobiology</i> ), cold - adapted microbial enzymes and their applications	Arctic and Southern Oceans Marine/terrestrial/coast aquatic environments
6	Effects of climate change on species long-term prospects	Polar and circumpolar areas
7	Biogeochemistry and Pedo-biology in polar coast areas	Polar coastal zones
8	Polar marine and coastal areas pollution	Polar marine and coastal areas
9	Medical research in polar zones	Polar expeditions and station areas including “I. L. Racovita” Antarctic Station



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#### Remarks

- The “Aurora Borealis” Icebreaker Project will be of great interest for the future development of European (Romanian included) polar studies, in the context of initiating and sustaining future international collaboration.
- The collaboration between the Romanian research institutes and universities, as well as the international cooperation can generate a consortium that could work to study the biodiversity of polar ecosystems, as well as the mechanisms of polar organism response to environmental conditions and their changes, and other essential parameters and phenomena determining the climate change and the adaptation to it.
- Classification and detection of viral particles, investigating their behaviour in marine ecosystems and their infective impacts (on bacterial and phytoplankton blooms, vertebrates and human health) is of growing interest and should be further developed.
- Our knowledge on these critical processes (stress adaptation included) is still in an early phase, so any research opportunity has to be capitalized.