

ABOUT WCRP

WCRP was established by the World Meteorological Organization (WMO) and the International Council for Science (ICSU) in 1980 as an outcome of the First World Climate Conference in 1979. The Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific and Cultural Organization (UNESCO) joined as co-sponsor in 1993.

Over the past 30 years WCRP has greatly increased our scientific understanding of the Earth's climate. Today, there is an unprecedented demand in many socio-economic sectors for relevant climate information. WCRP is taking the lead to help the global climate research community create a scientific foundation for meeting this demand.

WCRP provides the international forum to align efforts of thousands of climate scientists worldwide towards the aim of determining climate predictability and human impact on climate. The focus is on producing the best possible climate observing networks, models and data analysis and making these tools and climate information products available for practical applications.

Understanding and predicting climate variability and change requires comprehensive investigation of all major components of the climate system (the atmosphere, hydrosphere, oceans, land and cryosphere). WCRP studies these components and their interactions through the activities of its Core Projects. Past Core Projects include the Tropical Ocean Global Atmosphere (TOGA) project, which developed the foundations for prediction of El Niño and today's operational seasonal climate forecasts; the World Ocean Circulation Experiment (WOCE), which provided the first consistent picture of the global ocean circulation; and the Arctic

Climate System Study (ACSYS), which demonstrated the possibility of intensified climate warming in the northern high latitudes.

The current WCRP Core Projects are:

- **Climate and Cryosphere (CliC)**, co-sponsored by the Scientific Committee on Antarctic Research (SCAR) and the International Arctic Science Committee (IASC);
- **Climate Variability and Predictability (CLIVAR)**;
- **Global Energy and Water Cycle Experiment (GEWEX)**;
- **Stratospheric Processes and their Role in Climate (SPARC)**

FOR MORE INFORMATION

Please visit the conference webpage:
www.wcrp-climate.org/conference2011

or contact the Conference Secretariat:
info.conf2011@wcrp-climate.org



WCRP OPEN SCIENCE CONFERENCE

CLIMATE RESEARCH IN SERVICE
TO SOCIETY



24–28 October 2011, Denver, Colorado, USA

www.wcrp-climate.org/conference2011

VISION

A better understanding of the behaviour of the climate system and its interactions with other Earth system components is critical to predict its future evolution, reduce vulnerability to high-impact weather and climate events, and sustain life. This need is perhaps greater than ever before given that humans have emerged as the dominant agent of future change. Progress will require, moreover, an increasingly holistic approach across scientific disciplines, as well as an unprecedented commitment to the development of a diverse and talented future workforce.

To advance its attack on such challenges, **the World Climate Research Programme (WCRP) will assemble for the first time ever its entire research community, and engage other key international research programmes, in a major Open Science Conference (OSC) in October 2011.** Through a unique synthesis of presented research findings, the OSC will assess our current state of knowledge on climate variability and change, identify the most urgent scientific issues and research challenges, and ascertain how WCRP can best facilitate research and develop partnerships critical for progress.

ANTICIPATED OUTCOMES

The WCRP OSC represents an exclusive opportunity to assemble the international scientific community working to advance understanding and prediction of variability and change of the Earth's physical climate system on all space and time scales. The OSC will facilitate cross-fertilization across the diverse research communities within WCRP, as well as with other international research programmes, including the International Geosphere-Biosphere Programme (IGBP), the World Weather Research Programme (WWRP) and

the Earth System Science Partnership (ESSP). Such an active dialogue and discussion among international environmental change research communities is required to understand past climate changes and the current state of the climate system; to determine how, when, and where climate change may occur and what its effects will be on other components of the Earth system; and to identify opportunities for humans to mitigate and adapt to these changes.

The OSC will:

- Appraise the current state of climate science, thereby making a measurable contribution on the Fifth Assessment Report (AR5) of the Intergovernmental Panel on Climate Change (IPCC);
- Identify key opportunities and challenges in observations, modelling and analysis;
- Process research required to understand and predict responses of the Earth as a system, thus helping chart the path forward over the ensuing decades.

By entraining as many young scientists and students as possible from across the world, including less-developed and developing countries, the OSC will facilitate growth of the diverse future workforce needed to meet the increasingly complex scientific challenges of the future.

INTERNATIONAL ORGANIZING COMMITTEE

Jim Hurrell, Chair, NCAR, USA
Tom Ackerman, Uni. Washington, USA
Ghassem Asrar, WCRP JPS, WMO, Switzerland

Antonio Busalacchi, ESSIC, Uni. Maryland, USA
Christian Jakob, Uni. Monash, Australia
Rik Leemans, ESSP Chair, Netherlands
Jerry Meehl, NCAR, USA
Carlos Nobre, IGBP Science Committee Chair, Brazil
Ted Shepherd, Uni. Toronto, Canada
Julia Slings, MetOffice, UK
Koni Steffen, Uni. Colorado, USA
Kevin Trenberth, NCAR, USA
Carolina Vera, Uni. Buenos Aires, Argentina
Martin Visbeck, IfM-GEOMAR, Germany

PROGRAMME DESCRIPTION

The conference is organized by devoting each day to a major science theme that reflects an integrative aspect of the WCRP programme. Specifically, each day will include plenary presentations from both established and early-career experts on challenges and advancements addressing major, cross-cutting issues. **The work of individual scientists will be featured through daily poster sessions - an integral and major aspect of the OSC.** Each day will also include two or three parallel sessions. These sessions will feature both oral and poster presentations on major, integrative scientific topics. The OSC will conclude with plenary discussions focusing on outstanding challenges and the future pathway of the WCRP.

DAILY CONFERENCE THEMES

- The Climate System Components and their Interactions
- Observation and Analysis of the Climate System
- Improving Predictive Capabilities
- Environmental Assessments
- Challenges and the Future