



World Meteorological Organization

Weather • Climate • Water

# WW-OSC 2014

Michel Béland, President CAS



**THE WORLD WEATHER  
OPEN SCIENCE CONFERENCE**

**The weather: what's the outlook?**

**16 to 21 August 2014**

**WELCOME**

**CONFÉRENCE SCIENTIFIQUE  
PUBLIQUE MONDIALE SUR  
LA MÉTÉOROLOGIE**

**La météo : quel avenir?**

**16 au 21 août 2014**

**BIENVENUE**

**WWOSC 2014**  
MONTRÉAL, CANADA

Co-organized by / Co-organisée par :



**WMO OMM**



**ICSU**

International Council for Science



Environment  
Canada

Environnement  
Canada



National Research  
Council Canada

Conseil national  
de recherches Canada



**<http://wwosc2014.org>**



# Organizational Structure

## International Organizing Committee

Co-Chairs: A. Thorpe, M. Beland

## WMO Secretariat

T. Nakazawa

## Science Program Committee

Co-Chairs: S. Jones, G. Brunet

## User, Applications and social science Committee

Co-Chairs: D. Rogers, B. Mills

## Communications

S. Castonguay

## Local Organizing Committee

Chair: J. Langlais

## Conference Logistics Management

L. Forget, S. Couture, S. Cousineau

## Sponsorship & exhibitions

J. Abraham



# International Organizing Committee

Co-Chairs	Dr. Michel Béland	President of CAS Environment Canada
	Prof. Alan Thorpe	Director General of ECMWF
President-elect of ICSU	Dr. Gordon McBean	Institute for Catastrophic Loss Reduction The University of Western Ontario
Secretary General of IAMAS	Dr. Hans Volkert	Secretary-General of IAMAS IAMAS
WMO Officials	Dr. Deon Terblanche	Director, Atmospheric Research Department, WMO
From Canada	Dr Véronique Bouchet	Environment Canada
From USA:	Dr William Lapenta	NOAA/NCEP
From USA:	Dr James Hurrell	UCAR
From UK:	Dr. Julia Slingo	Chief Scientist, MetOffice
From Asia:	Dr Meiyuan Jiao	Deputy Administrator of CMA
From Africa:	Dr. Albert van Jaarsveld	President, National Research Foundation of South Africa
From South America:	Dr. Pedro Leite da Silva Dias	Director of LNSC (National Laboratory for Scientific Computation), Brazil
From Australia:	Dr Jon Gill	Manager, International Affairs, Bureau of Meteorology
From NSF:	Dr. Roger Wakimoto	Assistant Director for the Geosciences National Science Foundation (NSF)



# Weather Science Programme

Overarching theme of OSC: **Seamless Prediction of the Earth System: from minutes to months.**

The science presented will range from basic research that extends our knowledge of processes and methods to the applied research required to put the prediction system together and assess the impacts of weather and climate events.

The scientific program is organized around five science themes:

- Data Assimilation and Observations;
- Predictability and Dynamical/Physical/Chemical Processes;
- Interactions between sub-systems;
- Prediction of the Earth system: putting it all together;
- Impacts of weather and climate events (*joint session with UPC*)

And two special sessions on THORPEX legacy projects:

- Polar Prediction Project
- Sub-seasonal to Seasonal Prediction Project.



# Science Programme Theme Leads

## *Co-chairs*

Gilbert Brunet (Met Office, UK; gilbert.brunet@metoffice.gov.uk)  
Sarah Jones (DWD, Germany; Sarah.Jones@dwd.de)

## *Data Assimilation and Observations*

Eugenia Kalnay (U. of Maryland, USA; ekalnay@atmos.umd.edu)  
Yoshiaki Sato (JMA, Japan; y-sato@met.kishou.go.jp)  
Roger Saunders (UK; roger.saunders@metoffice.gov.uk)

## *Predictability and Dynamical/Physical/Chemical Processes*

Heini Wernli (ETH, Switzerland; heini.wernli@env.ethz.ch)  
David Parsons (U. of Oklahoma, USA; dparsons@ou.edu)

## *Interactions between sub-systems*

Andreas Schiller (CSIRO, Australia; andreas.schiller@csiro.au)  
Gianpaolo Balsamo (ECMWF; gianpaolo.balsamo@ecmwf.int)  
Oystein Hov (NMI, Norway; oystein@met.no)

## *Prediction of the Earth system: putting it all together*

Philippe Bougeault (Météo-France France; Philippe.Bougeault@meteo.fr)  
Beth Ebert (BOM, Australia; e.ebert@bom.gov.au)  
Martin Miller (ECMWF, UK; Martin.Miller@ecmwf.int)  
Marty Ralph (ESRL, USA; marty.ralph@noaa.gov)

## *Impacts of weather and climate events (joint session with UPC)*

Johnny Chan (U. of Hong Kong, China; johnny.chan@cityu.edu.hk)  
Walter Dabbert (Vaisala Inc., USA; Walter.Dabberdt@vaisala.com)



# Science Plenary Speakers



- **Mel Shapiro:** to present the future scientific challenges of Earth-system prediction aligned with the 2010 BAMS compendium of vision papers;

- **Al Kellie:** to speak on the past, present and future of High Performance Computing and its applications in weather prediction;



- **Philippe Bougeault:** to present state-of-the-art mesoscale NWP and regional applications (hydrology, coastal prediction,..) with some background on PPP and HIW projects and other WWRP RDPs (MAP, MAP-D- PHASE, HYMEX ...);



- **Julia Slingo:** to present on the seamless prediction problem, including bridging global NWP and climate prediction through sub-seasonal (starting at two weeks) to seasonal prediction (S2S ...);



- **Jean-Noël Thépault:** to present on the actual status and future challenges of data assimilation and observing systems (global and regional);

- **Alan Thorpe:** to present on global NWP (including EPS, chemical constituents, cryosphere ...) with an historical perspective (past, present) and future directions.



# Science Program Structure

## **SPECIAL SESSIONS: WWRP POST-THORPEX LEGACY**

**PPP** - Polar Prediction Project (PPP)

**S2S** - Subseasonal to Seasonal (S2S) Prediction Project

### **Theme 1 - ODA - Observations and Data Assimilation**

**ODA** - New technologies and observation instrumentation innovations: from urban to global scales.

**ODA** - Observations and their assimilation in global to convective scale models

**ODA** - THORPEX field campaigns

**ODA** - Observations and assimilation of atmospheric constituents

**ODA** - Ocean and cryosphere observations and their assimilation

**ODA** - Coupled data assimilation and reanalyses

**ODA** - Data assimilation methodology and diagnostic tools

### **Theme 2 - P&P - Predictability and Dynamical/Physical/Chemical Processes (PDPCP)**

**P&P** - Dynamics and predictability of middle latitude weather systems and their higher and lower latitude interactions

**P&P** - Continental convective systems

**P&P** - Clouds and radiation

**P&P** - Tropical cyclones and tropical convection

**P&P** - Sub-grid parameterizations for the atmosphere and ocean

**P&P** - Stochastic forcing, Ensemble prediction systems and TIGGE

**P&P** - Atmospheric and oceanic composition (observations, processes and physics)

**P&P** - Numerical modelling of the atmosphere and ocean (including composition and boundary layer at all latitudes)

**P&P** - Year of Tropical Convection (YOTC)



# Science Program Structure

## Theme 3 - ISS - Interactions between sub-systems

**ISS** - Land-Atmosphere interactions and water cycle

**ISS** - Ocean-Atmosphere coupling and interaction

**ISS** - Cryosphere and stable atmospheric boundary layers

**ISS** - Ecosystems modelling and carbon-meteorology

**ISS** - Chemicals transport and aerosols modelling

**ISS** - Coupling sub-systems: methodologies and diagnostic tools

## Theme 4 - NPE - Numerical Prediction of the Earth system: putting it all together

**NPE** - Urban scale environmental prediction systems

**NPE** - Environmental Prediction Systems: Tropical Aspects

**NPE** - Environmental Prediction Systems: Mid latitude regional aspects

**NPE** - Environmental Prediction Systems: Global and medium-range aspects

**NPE** - Cross-cutting research on verification techniques

## Theme 5 - WHI - Weather-related Hazards and Impacts

**WHI** - Development of applications in the forecasting process

**WHI** - Improved understanding of the synergies and science-based needs of multi-hazard events

**WHI** - Improved understanding of and techniques for decision making



# User, Application and Social Science Programme

The *User, Application and Social Science (UAS) Programme* provides an open forum where the experiences and perspectives of a variety of information providers and users will be combined with the latest applications and methodological advances in social science to:

- Demonstrate and document recent progress, highlighting and sharing lessons from both successful and 'less successful' projects and applications;
- Identify and deliberate areas of practice, social science research methods, and training and education requiring new or continued attention;
- Expand and connect the interdisciplinary weather and society community; and
- Develop conference positions and recommendations regarding the state and advancement of knowledge and practice.



# User, Application and Social Science Programme

## Programme Committee

**Rowan Douglas** (Willis Research Network)

**Eve Gruntfest** (University of Colorado)

**William (Bill) Hooke** (AMS)

**Michel Jancloes** (Health and Climate Foundation)

**Haleh Kootval** (WMO)

**William Mahoney** (NCAR)

**Claire Martin** (IABM and CBC)

**Hassan Virji** (START)

## Brian Mills & David Rogers

*Co-chairs, WWRP-OSC-UASP*

- Meteorological Research Division, Environment Canada  
[Brian.Mills@ec.gc.ca](mailto:Brian.Mills@ec.gc.ca)
- Health and Climate Foundation, [drogers@hc-foundation.org](mailto:drogers@hc-foundation.org)



# UAS Intended Audience

**User, Application and Social Science Programme** will appeal to four primary groups:

- Representatives from businesses, organizations and government agencies with experience in, and responsibility for, managing weather-related risks and opportunities;
- Private enterprise, non-government organizations, and public sector institutions that provide, communicate, and tailor weather and related risk or impact information, advice and services to others in support of their decision-making;
- Academic, government, or private sector researchers who study and evaluate the communication and use of weather-related information in decision-making and resulting societal and economic impacts and outcomes.
- Natural or physical scientists and practitioners interested in understanding the current and future needs and preferences of users for weather information.



# Key Elements of UAS Programme

- Joint plenary with Scientific Programme each day (UAS speakers pictured on slide)
- Opening morning panel session on the highlighted session theme of the day (half-plenary room to maintain cohesion)
- Two sets of afternoon panel and/or traditional parallel sessions running across all themes (depending on demand/papers)
- Lunchtime or late afternoon “Practical Workshops or Primer Sessions” related to the session theme of the day (tbc)
- Poster sessions



**Dr. Alberto Troccoli**

Head of the Weather and Energy Research Unit Commonwealth Scientific and Industrial Research Organization (CSIRO)



**Professor Eve Gruntfest**

Professor Emerita of Geography and Environmental Studies, Senior Research Associate, Trauma, Health and Hazards Center University of Colorado



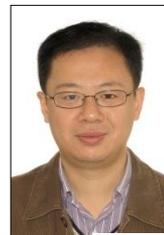
**Mr. Rowan Douglas**

Chairman,  
Willis Research Network  
Willis Group



**Professor Emma E. Porio**

Professor of Sociology,  
Ateneo de Manila University



**Dr. Haidong Kan**

Professor of Environmental Health Sciences  
Fudan University in Shanghai



# UAS Session Themes & Topics

## **Good and Services Economy**

- Agriculture, forestry and fisheries
- Construction
- Energy exploration, production, supply, demand, and distribution (traditional and renewable sources)
- Healthcare and social services
- Insurance and financial services
- Private sector weather services
- Retail and manufacturing
- Tourism, accommodation, recreation and leisure
- Transportation (air, road, rail, marine)
- Water-related utilities

## **Government Organizations & Functions**

- Civil infrastructure design and operation
- Community, state/provincial, national and international agencies
- Defense and military operations
- Emergency management and evacuation
- Health and safety-related regulation, policy, and programming
- Water and natural resources management
- Wildfire management

## **Disaster Risk Reduction & Management**

- Hydrometeorological disaster costs and impacts
- Hydrometeorological disaster and hazard event case studies
- Meteorological services for humanitarian aid
- Understanding and responding to multi-hazard events
- Weather knowledge in support of disaster preparedness, response, recovery, and mitigation



# UAS Session Themes & Topics

## **Communication of Weather Information**

- Better ways to transfer knowledge among scientists, forecasters, and users of weather information
- Case studies in communicating warnings and advice
- Communication of uncertainty in forecasts, impacts and responses
- Future roles of traditional and social media in communicating weather and impact information
- Information systems and technologies to improve communication and facilitate and support decision making (e.g., mobile, internet, social networking, Geographic Information Systems)
- Media-Scientist relationships: Where we went wrong and how to fix them
- Warning and alerting thresholds and criteria (design, development, communication and evaluation)

## **Cross-cutting & Other Topics**

- Estimating the social and economic value of weather, water, and climate information
- Future roles of National Meteorological and Hydrometeorological Services (NMHSs) and “the forecaster”
- Managing weather-related impacts in cities with the goal of minimizing unintended consequences
- Training and education needs for interdisciplinary scientists, practitioners, and service providers
- Understanding the perception and use of weather information in decision-making
- Self-defined topics for consideration

## **Science Program – Theme 5**

- Weather-related hazards and impacts



# Daily Programme

## Day at a glance

- 08:30 – 10:10 Joint Plenary Session with User and Social Sciences Programme;
- 10:10 - 10:40 *Break*
- 10:40 - 12:00 Parallel sessions
  - Panel discussion in User Programme with participation from representatives of science programme
  - Parallel sessions in Science Programme
- 12:00 - 13:30 *Lunch in Exhibits Hall*
- 13:30 - 15:00 Parallel sessions;
- 15:00 - 16:30 Poster session with refreshments; Exhibitors present
- 16:30-18:00 Parallel sessions.



# Additional Information

- Conference will aim to foster early career scientists participation (see D. Terblanche's presentation) and the creation of an early career scientists network
- The International Workshop on Air Quality Forecasting Research 2014 will be held in conjunction with the WWOSC-2014
- WWRP and THORPEX working group meetings planned in conjunction with the Conference



# Abstract Submission is now opened

## Deadline for Submission : February 24, 2014

**Abstracts Submission Limit:** Only one (1) abstract submission for a given first author.

**Presenting Author:** Submission of an abstract constitutes a commitment by the submitter/presenting author to present if accepted.

**Co-Author(s):** You will be given an opportunity to include up to ten (10) co-authors on your submission

**Accepted Abstracts:** An email message will be sent to the Abstract Submitter the week of April 21, 2014 with a report on the status of the abstract (accepted or rejected).

- The Conference Program Committee will determine the format, day and time of presentation.
- The presenting speaker or poster presenter will be required to register to the Conference by **May 22, 2014** to confirm their acceptance and be included in the Conference Program and Book of Abstracts. Accepted authors who do not register by the deadline will not be included in the Conference Program or Book of Abstracts.

**WWOSC 2014 Travel Support:** Application must be made during the abstract submission process by February 24, 2014.





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# Thank you for your attention

This space can be used for  
contact information