

**INTERDEPARTMENTAL COMMITTEE FOR METEOROLOGICAL SERVICES AND
SUPPORTING RESEARCH (ICMSSR)**

INTERAGENCY WEATHER RESEARCH COORDINATION COMMITTEE (IWRCC)

Record of Actions: 2019-1 Meeting

May 22, 2019 9:45 AM EDT; SSMC 2 Room 7130

Office of the Federal Coordinator for Meteorology
Suite 7130, SSMC2
1325 East West Highway
Silver Spring, MD 20910

PARTICIPANTS

(T): Participated via telecon

Agency	Organization	Name
DOC NOAA	OAR (IWRCC Co-Chair)	Dr. John Cortinas
NASA	ESD (IWRCC Co-Chair)	Dr. Tsengdar Lee (T)
FAA	AWD	Mr. Randy Bass
NSF	GEO/AGS	Dr. Chungu Lu (T)
NSF	GEO/AGS	Dr. Anjuli Bamzai (T)
DOC NOAA	NWS IA	Ms. Shanna Pitter (T)
DOD Navy	OPNAV	Mr. David McCarren
DOC NOAA	OAR	Ms. Monique Baskin (T)
NASA JPL	JPL	Dr. Duane Waliser(T)
UW		Dr. Michael Morgan(T)
OFCM	Executive Secretary	Mr. Sim James
OFCM/STC		Mr. Floyd Hauth (T)

1. **OPENING REMARKS.**

Dr. John Cortinas and Dr. Tsengdar Lee (Co-chairs, IWRCC) called the meeting to order at 9:45 A.M. and provided opening remarks. Mr. Sim James (IWRCC ExecSec) provided administrative details, reviewed the agenda, and conducted roll call.

2. **ACTION ITEMS REVIEW.**

Mr. Sim James (IWRCC ExecSec) reviewed the status of Action Items from previous IWRCC meetings.

Action Item 2018-2.4 is closed.

Action Items 2018-2.2, 2.5, 4.1, 4.2, and 4.3 remain open and require renewed attention from the IWRCC and or WGs. Action Item 4.1 will be addressed during the meeting today.

A comment was made that in Action Item 2.5, care is needed in assigning priorities to research being reported to the ICMSSR/FCMSSR.

Membership Discussion: Randy Bass was welcomed as the FAA IWRCC member. A member is still needed from the NWS and Mr. James is coordinating that action.

Working Group Alignment: Mr. Dave McCarren described the current National Earth System Prediction Capability (ESPC) Technical Working Groups: Common Model Architecture, Physics Interoperability, Content Standards Committee, Unified Ensemble Operations, Model Component Liaison, Coupled Global Modeling, and High-Performance Computing. He noted that most of these groups meet every month. The intent is to leverage IWRCC activities related to the Polar Prediction Project (PPP), Sub-Seasonal to Seasonal Prediction Project (S2S), and High Impact Weather Project (HIWeather) rather than forming new groups within the ESPC that may be a duplication of effort.

Members requested that lists of ESPC WG membership and recent meeting topics be provided to the IWRCC.

There additional discussion related to research on ensembles and probabilities.

3. **REPORT FOR USWRP.**

Section 108 of Oceanic and Atmospheric Administration Authorization Act of 1992 directs the submission of a ten-year implementation plan of the USWRP research agenda. The law directs the requirement to list and describe research goals and activities as part of the mandated implementation plan. The ICMSSR has asked the research community via the IWRCC to coordinate a meeting to help scope the response.

Mr. James reported that Dr. Cortinas took the matter to the ICMSSR earlier this year as discussed at the last IWRCC meeting. The proposal was to form a group of ICMSSR representatives to list priorities and publish that information in the FY20 OFCM Budget Coordination Report. ICMSSR directed an exploratory scoping meeting of needs for a one-time report.

Mr. James called for personnel to assist with the scoping meeting and received nominations from NASA, NOAA, NSF and NAVY. A digital copy of the original plan was created by OFCM and provided to the agency representatives. The initial meeting of the group was held before the last ICMSSR and they made some preliminary decisions about general content of the report.

A second, more comprehensive meeting is needed now to develop a “plan for a plan” for review by the IWRCC and then provide it to the ICMSSR. The FAA member volunteered to provide a representative and a replacement for the NASA member is underway.

Members noted that any follow-on plan can be much smaller than the original because the annual OFCM BCR covers much of what was required in the original implementation plan that was directed by Congress.

4. WEATHER RESEARCH WORKING GROUP UPDATE.

The SWG Co-Chairmen provided status on activities since the last meeting.

Dr. Walliser reported on the presentation he made to the OMB in which he summarized information from two NAS reports that identified the observations needed to improve process knowledge, modeling and forecast capabilities. One of the concerns is that little or no experimentation has been done that quantitatively compares the utility of one observation type over another for improving S2S prediction, making it difficult to prioritize the observations needed.

Studies show that creative ways need to be developed to collaboratively enhance our nations S2S forecast model. NCEP/NOAA are partnering with NCAR to provide a community version of their model forecast system, providing a vehicle to reduce the path (in terms of time, funds, effort) between Research and improved Operational prediction (R to O). NASA and other federal Earth Science research agencies have the expertise to significantly improve NCEP/NOAA S2S forecast fidelity, given they have the needed/added resources and direction.

Modern day S2S forecasting relies on “ensemble” approaches to forecasting to account for uncertainties in the initial conditions and model physics. Forecast fidelity strongly relies on the size and comprehensive nature of the forecast ensemble. S2S forecast guidance is critical for water availability and drought concerns, as well as flood preparation and response. In concert with NCEP/NOAA and other S2S forecast centers, NASA and GMAO are in a strong position to help determine optimal S2S forecast strategies.

Dr. Walliser provided OMB with recommendations for near-term actions:

- Conduct model/OSSE studies to prioritize new Earth observations based on their impacts for improving S2S forecasts.
- Provide inter-agency R-O support for NCEP/NOAA’s community model vehicle to improve S2S forecasts.
- Increase computation capacity for S2S predictions and determine optimal ensemble forecast strategies.
- Increase focus and capacity for applied science research to help bridge gaps between S2S forecast product development and stakeholder needs.

Dr. Morgan provided an update on the High Impact Weather Project (HIWeather). He briefly summarized the mission and scope of the project in terms of a carefully selected set of five hazards: urban flood, wildfire, localized extreme wind, disruptive winter weather, urban heat waves and pollution. The research required to deliver enhanced resilience to these hazards will be carried out in five themes that cover areas traditionally separated into the physical and social sciences.

The research themes are:

- Predictability and processes.
- Multi-scale forecasting of weather-related hazards.
- Human impacts, vulnerability and risk.
- Communication.
- User-oriented evaluation.

Dr. Morgan described the research focus for each of the themes and the lead members of the group participating internationally in each of the theme areas.

He summarized two current projects;

- The High Impact Weather Lake System (HIGHWAY) project is a three-year project that aims to increase the use of weather information to reduce the loss of life and damage to property in the Lake Victoria Basin region of East Africa. This project will address the lack of much needed in-situ observations and data availability both for research and meteorological operational purposes.
- TIGGE (THORPEX Interactive Grand Global Ensemble) and TIGGE-LAM (-Limited Area Model). The TIGGE dataset (<https://www.ecmwf.int/en/research/projects/tigge>) is one of the major achievements of THORPEX. It now contains over 10 years of global data. On a smaller scale, the TIGGE-LAM dataset provides 5 years of multi-model ensemble data at mesoscale resolution for limited areas. These datasets have been used to investigate a variety of atmospheric processes and there is scope for more use in the context of HIWeather.

Dr. Morgan closed by identifying some upcoming relevant activities and events, and actions he will be undertaking. These include completing an inventory of HIWeather research activities and re-convening the HiWx working group.

Members commented on the amount and types of research being conducted in the U.S. and internationally. They noted that although weather forecasting operations in general are well coordinated on a global basis, research information/efforts are less coordinated.

It was also noted that some R & D generated data are used in operations, especially related to satellite systems, and if the R & D is discontinued there can be negative impacts on operations. It was suggested that a list of research concerns such as the example above should be developed by the WGs and provided to the IWRCC periodically.

5. WMO Update

Ms. Shanna Pitter (NWS IA Office) provided an update on R and D related WMO activity.

Since its establishment in 1950, WMO has recognized the need to respond to a changing world. The need for regular reform is being driven by environmental degradation, resource constraints, increased competition, technological advances, and other forces. WMO Members are committed to delivering high-quality weather, climate and water information and services to assist decision-makers in a Global Risk Landscape for the coming decade. This information helps identify extreme weather events, natural disasters, water crises, biodiversity loss and ecosystem collapse, and man-made environmental disasters (such as climate change) among the most likely and highly impactful risks.

The goal for WMO reform is to remain fit-for-purpose and to become nimbler and more cost-effective: A SMART Organization that is agile and responsive to new challenges.

The WMO Congress meets every four years and the next meeting will be in June 2019.

WMO has developed their Strategic Plan for 2020-2030. It contains their overarching priorities, core values, long-term goals and strategic objectives. Their strategic realignment of structure and programmes is intended to optimize WMO constituent body structure, streamline WMO programmes, and advance equal, effective and inclusive participation. Their alignment of the WMO Governance structure is with their long-term goals in services, systems, science, support to members, and smart organization. This will provide for an enhanced role for regional associations.

Ms. Pitter summarized information on the role of the technical commission, standing committees and study groups. Under the new structure, practices and procedures are expected to be a clear delineation between intergovernmental work by Technical Commissions, expert work by Standing Committees and consistency of the Technical Regulations developed by multi-disciplinary Commissions.

More interaction and collaboration are anticipated with partners from all relevant areas including the ICAO and the World Health Organization.

Capacity development of the WMO will be given high priority by increasing the engagement of all WMO Members in a new integrated approach to address national, regional and global needs. A more agile, smart WMO will coordinate support with increased speed and greater added value for members to provide information and services that respond to national and regional needs and emerging challenges.

Reforming the WMO will provide a wide range of benefits including more focused technical products to members and a clearer way for members to target their investments in the organization.

The WMO regulations permit members to nominate experts from National Meteorological Services (NMHSs), academia, research institutions and the private sector. This broadens the depth and scope of experts in the network, who can be selected to Standing Committees, Study Groups and Expert Teams of Technical Commissions.

Ms. Pitter explained that self-nominations for membership on commissions, committees and study groups are currently being solicited and encouraged interested members of the IWRCC and their colleagues to participate in the WMO in their areas of expertise and interest.

6. NEXT STEPS/CLOSING COMMENTS/ADJOURN:

Mr. James summarized tentative Action Items from the meeting and proposed preliminary topics for future meetings.

The Co-Chairs thanked participants for their participation. The meeting was adjourned at 11:33 A.M.

ACTION ITEMS

2019-1.1: Send ESPC membership info and recent topics lists to IWRCC members (and WGs as appropriate).

2019-1.2: Have WGs develop and share with IWRCC their list of research concerns.

2019-1.3: Reminder to IWRCC and WG members about WMO need and process for self-nominations for various WMO boards/activities. (Short suspense)