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Announcement: White Paper and Webinar on Atmosphere-Related Research in Canadian Universities (ARRCU)

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We are pleased to announce the posting of a "White Paper on Atmosphere Related Research in Canadian Universities" (ARRCU). The White Paper can be found at the website ARRCU.ca under the "Documents" tab.

This paper represents the viewpoint of the working group on Atmosphere-Related Research in Canadian Universities (ARRCU). This is a self-organized group of Canadian university faculty who undertake research in weather, climate, and air quality under the general framework of atmosphere-related research (ARR). ARR considers the whole atmosphere, from the surface to space, and its interaction with land-surface, hydrologic, ocean, cryospheric, and space systems. Work in this area connects atmospheric and related sciences to many other areas of environmental and social science.

Following preparatory workshops in August 2014 and May 2015 (see *CMOS Bulletin* August 2015, **43**(4), http://tinyurl.com/arrcu-CMOS-Bull-2016), the ARRCU working group has initiated a strategic planning process in Canadian ARR across the university, government, and industrial sectors. We aim to help configure academic ARR to most benefit Canada in a time of rapid environmental and socio-economic change. We believe that a strategic plan initiated from the Universities, renewable on a 5-7 year basis, will benefit ARR activities within and outside the wide range of University departments and disciplines where ARR takes place. The planning process is structured on the themes of 1) building research capacity and excellence; 2) partnerships with government and industry and sustainable research support; and 3) education, training, and outreach.

A hallmark of ARR as an area of research and scholarship is its applied relevance, given its strong linkages to environmental forecasting and spin-off applications. In the White Paper we emphasize the strong connection between applied and fundamental research in ARR --- we frame this in terms of the two-way flow of research ideas and results from "Discovery to Application" and from "Application to Discovery" (see Figure 1, which is described in more detail in the White Paper). We aim to enhance the University community's research capacity, partnerships, and efforts in education and training to provide the most benefit to Canadians in a time of rapid environmental and socio-economic change. The ARRCU effort does not direct priorities in fundamental research but we instead summarize priority areas for research partnerships that the Canadian research community is well positioned to undertake in the next several years.

Our effort has received the encouragement and support of the CMOS Scientific Committee, the Canadian Space Agency (CSA), and NSERC, as well as other agencies and industry. The White Paper has been signed by over 70 Canadian University faculty after an extensive review process that has taken place over the last six months. We invite readers of the CMOS Bulletin to read and give us further feedback on the White Paper and this initiative. (University faculty who agree with the White Paper's perspective are invited to add their names to the list of signatories on an ongoing basis.)

We also invite interested readers to attend a webinar on November 7 from 2 p.m. to 4 p.m. Eastern Time, to discuss those aspects of strategic planning related to academic-government partnership, in preparation for a focus paper on this theme. To participate in the webinar, please follow the link

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https://www.surveymonkey.com/r/XF9RNLD

or simply email Dr. Sylvie Roy of NSERC (<u>Sylvie.Roy@NSERC-CRSNG.GC.CA</u>) who will send you additional briefing materials and joining instructions.

Research disciplines and infrastructure	to study coupled physical/chemical/biogeochemical processes in	supporting integrative research in
 Physical, chemical, and life sciences Mathematics and statistics Laboratory Remote sensing In situ measurements, field campaigns Advanced research computing 	 Atmosphere Ocean Land Hydrosphere Cryosphere Biosphere 	 Weather Climate Air quality



 Air quality assessments and forecasts Seasonal climate and hydroclimate prediction Understand historical and current climate change. Climate change projections. Hazard mitigation Sea ice forecasting 	 (e.g. hydrological, marine, stratospheric and tropospheric ozone, space weather) Climate impact assessment Applications in agriculture, forestry, human health, renewable-energy/other resource sector activities, transportation, commerce, and other industries. 	 Input into policy, resource planning, and industrial planning Communication of ARR to media and public: attribution, articulating scenarios and outcomes, assessing risk for the public and institutions 	 Undergraduate teaching Education and training of highly qualified personnel Professional certification programs
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Figure 1: Scope and framework for university-based ARR, from the ARRCU White Paper.

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