

Minutes of the ARRCU SIG executive and advisory board meeting  
(December 5, 2019)

**MINUTES OF THE ARRCU SIG EXECUTIVE AND ADVISORY BOARD MEETING**

---

Date: December 5, 2019  
via videoconference

MEMBERS OF THE EXECUTIVE AND ADVISORY BOARD:

Paul Kushner (chair), Adam Monahan (vice-chair), Pierre Gauthier (secretary-treasurer), Hind Al-Abadleh, Peter Bartello, Paul Myers, Roland Stull, Peter Taylor

SPEAKER:

Shawn Marshall (ECCC),

1. THE ARRCU EDUCATION WHITE PAPER

The ARRCU white paper on education has been circulated and comments were collected by Paul Myers. Several expressed the relevance and appreciation of the paper in its current form and would like to use it to promote the relevance of atmosphere related science in their universities. It was agreed that this version of the paper could be circulated keeping in mind that it will be updated to take into account the comments received. We thank Paul Myers for having completed this white paper which reflects the problems and challenges that many are facing in education.

The discussion that followed raised many issues with the objective of defining what could be the next steps for ARRCU. Several universities have had a decline in the number of students in atmosphere related programs. Historically, a solid background in physics and mathematics was sought and this is still a requirement for candidates at ECCC for weather forecasting and research. Such positions require graduate studies in ARR. For undergrads, other opportunities are in clean energy, air quality and environment. In these areas, a program could provide a good formation with less maths and physics. Physics and maths are important for careers in research but impact studies require a different background to include socio-economic aspects. We need both to reflect the needs of ECCC and other professions.

Universities require programs to enroll a minimal number of students to be maintained. An avenue that has been taken by some is to have general open courses that could attract students from other programs and therefore, have a large attendance. UBC has such courses (e.g., meteorology for sailing, flying, skiing), others have courses on climate and climate change or high impact weather, which is of interest for students in geography and management for example. This approach allows universities to open courses with fewer students than the accepted “minimum” while the mean attendance is above this minimum.

Visibility of our science is also an issue. Although climate, climate change and severe weather is of interest to the population because of their impact in their life, the underlying science is not well understood. This is not only for the general public but by governments,

Minutes of the ARRCU SIG executive and advisory board meeting  
(December 5, 2019)

particularly management at high level. As pointed out in a study by *Evidence for Democracy*, while funding related to climate change has been increasing for impact studies on different sectors (e.g., energy, land and risk management), the funding for the basic science has not. ARRCU being atmosphere related, it could reach out to other organisation (e.g., CAP, Chemical Institute of Canada) to speak with one voice on the need for a coherent funding of the fundamental research. Communication and education go beyond scientific papers and outreach activities could help us to increase our visibility.

## 2. PRESENTATION BY SHAWN MARSHALL, SCIENTIFIC ADVISOR AT ECCC

ECCC now has a scientific advisor, Prof. Shawn Marshall from the University of Calgary. We invited him to discuss with us his role and how ARRCU could help to improve our relation with federal research. Prof. Marshall is detached at ECCC from his university for a period of two years. The federal government has created similar positions in other departments (e.g., DFO, NRCan, Public Health). The objective is to develop a science policy and bridge ECCC with the academic community. There are a number of internal issues that the scientific advisors need to address regarding access to data, and external linkages. He reports to the Deputy Minister and help to respond to international issues on climate change, water resources, or air quality for instance.

The ensuing discussion focused on identifying how ARRCU could help. The white papers cover different aspects of collaborative research in universities with governments and industry. Collaboration would be helpful on climate to supplement ECCC capacity. Carbon emission is important and ECCC would require more expertise that is currently lacking. This could be an area in which collaboration with universities could be fruitful. Another area is monitoring in the Arctic. ECCC has the mandate from WMO for monitoring the Arctic. This could be an opportunity for collaboration with universities who have expertise on what needs to be better observed.

Collaboration with universities would require a coherent ECCC research program that could issue calls for proposals, stating the nature and objectives of their needs. CSA does it and this makes the whole funding process open and accessible. In our field, collaborative research is difficult with the private sector that needs to cover at least its costs and make a small profit. The NSERC Alliance program now allows collaborative research with the federal government. It still remains to be seen how well this works. There are opportunities for joint projects involving universities, private sector and governments provided ECCC contributes to funding or at least, provides letters of support with in-kind contribution.

## 3. COLLABORATION WITH GOVERNMENT AND INDUSTRY

Funding from ECCC comes from the Grants and Contribution programs (G&C) which would benefit by being more transparent, issuing call for proposals with a review process. There is no discussion at the moment within ECCC about changing the program, which is

Minutes of the ARRCU SIG executive and advisory board meeting  
(December 5, 2019)

supported by ECCC middle management. Lack of transparency is also noted in arbitrary decisions on making changes to the observation network (e.g., closing the Sable Island station). Other similar examples were mentioned.

There are examples of close collaborations of ECCC with universities. It collaborates with University of Victoria by having some of its climate research being done on campus (or nearby). The Canadian Middle Atmosphere Model (CMAM) including data assimilation is another example of collaboration between universities (e.g., U of T, York) and ECCC. It also collaborated with UQAM on the development of a regional climate model (still ongoing). It would be important for ECCC to develop a strategy to create a functioning relationship with universities. There seems to be little interest to invest in collaboration. At the level of research scientists, there is an interest but funding often requires some creative management that differs from one project to another.

There was a workshop in Ottawa on climate and its impact but there was little about the scientific needs to support these activities. We need to find a way to convey a message regarding the needs to support the fundamental and applied *science* to properly address the policy issues. Higher management need to be more aware of this.

Minutes of the ARRCU SIG executive and advisory board meeting  
(December 5, 2019)

4. ANNEX

The ARRCU-SIG executive meets with the advisory board every two months. The meetings are open to all every four months to collect input from the community. Changes to the advisory board will take place this year to renew one third of the board every year. The nomination of new members will be announced at the next executive meeting. Table 1 and 2 gives the terms of the members of the executive and advisory board.

<b>Executive</b>	<b>Start of appointment</b>	<b>End of appointment</b>
Paul Kushner (University of Toronto, Chair)	2018-2019	2020-2021
Adam Monahan (University of Victoria, Vice-Chair)	2018-2019	2020-2021
Pierre Gauthier UQAM, Secretary/Treasurer	2018-2019	2020-2021

Table 1: Terms of the members of the executive

<b>Advisory Board</b>	<b>Start of appointment</b>	<b>End of appointment</b>
Hind Al-Abadleh (Wilfred Laurier)	2018-2019	2020-2021
Paul Myers (University of Alberta)	2018-2019	2020-2021
Peter Taylor (York university)	2018-2019	2019-2020
Roland Stull (University of British Columbia)	2018-2019	2020-2021
Yanping Li (University of Saskatchewan)	2019-2020	2021-2022
Peter Bartello (McGill University)	2019-2020	2021-2022
Aldona Wiacek (Saint Mary's University)	2019-2020	2021-2022

Table 2: Terms of the members of the advisory board.