



WP 13a

Agenda Item: 4.2.5

Person Responsible: N.Bertler & T.Bracegirdle

**XXXIV SCAR Delegates Meeting  
Kuala Lumpur, Malaysia, 29-30 August 2016**

# AntarcticClimate<sup>21</sup>

## Executive Summary

**Authors: Nancy Bertler and Thomas Bracegirdle**

**Important Issues or Factors:**

*In 2016, AntarcticClimate<sup>21</sup> has been in existence for four years and in accordance with the terms of reference, a review of the steering committee membership was carried out. In August 2016, Associate Prof. N. Bertler is stepping down as chair of AntarcticClimate<sup>21</sup>. We are pleased to announce that Dr. Thomas Bracegirdle was unanimously elected by the steering committee to take up the role of the new chair of AntarcticClimate<sup>21</sup>. N.Bertler and T.Bracegirdle collaborate as co-chairs until the Delegates Meetings in Malaysia to ensure a smooth transition. Dr. John Turner is stepping down from his position as steering committee member and our aim is to replace him with another atmospheric scientist. We would like to take this opportunity to thank Dr. Turner John for his leadership, contributions, and mentorship. John brought a tremendous amount of experience and wisdom to our team provided critical input to create this SRP. All remaining steering committee members continue to serve on the steering committee to ensure successful completion. In addition, we aim to recruit at least one additional steering committee member, including an expert on sea ice.*

**Recommendations/Actions and Justification:**

We kindly request the Delegates to note this update.

**Budget Implications:**

2016 Budget	Expenditure	Budget
2016 Budget Request		\$ 20,000.00
Support for APECS Representative to attend SC Meetings and Scientific Workshops	\$ 2,500	

AntClim21 Symposium	\$ 7,500	
AntClim21 Webpage / Data Portal	\$ 4,000	
Publication Fees (incl. \$3k for 2015)	\$6,000	

<b>2017 Budget</b>	Expenditure	Budget
2017 Budget Request		\$ 20,000.00
Support for APECS Representative to attend SC Meetings and Scientific Workshops	\$ 2,500	
Workshop on preparation of the AntClim21 report	\$ 10,000	
AntClim21 Webpage / Data Portal	\$ 4,000	
Publication Fees	\$3,500	

<b>2018 Budget</b>	Expenditure	Budget
2018 Budget Request		\$ 20,000.00
Support for APECS Representative to attend SC Meetings and Scientific Workshops	\$2,500	
Workshop on finalising the AntClim21 report	\$12,000	
Antclim21 Webpage / Data Portal	\$2,000	
Publication Fees	\$3,500	

## Introduction/Motivation

The principle aim of *AntarcticClimate*<sup>21</sup> is to provide robust, data-evaluated projections of climate change over the 21<sup>st</sup> century and beyond. This will support SCAR's leadership in Antarctic research and policy advice and addresses an urgent and important uncertainty in the impact of future climate change.

## Progress to Date

Since the AntClim21 review document was submitted, some new exciting milestones were achieved.

### Enhanced collaboration with CliC to provide Antarctic CORDEX

Dr. Thomas Bracegirdle, *AntarcticClimate*<sup>21</sup> Co-Chair, attended a CliC Leadership meeting to discuss the collaboration between AntClim21 and CliC on CORDEX, a coordinated atmospheric regional modelling initiative. The CliC Team enthusiastically supported our suggestion for *AntarcticClimate*<sup>21</sup> to display CORDEX-based maps of Antarctic temperature and precipitation modelling experiments on the *AntarcticClimate*<sup>21</sup> website and data portal. Important aims of this collaboration are:

- To provide an effective conduit for CORDEX products to reach and interact with research communities focused on assessing the impacts for projected changes including the wider SCAR community
- For *AntarcticClimate*<sup>21</sup> to help identify opportunities for resources/researcher effort for the evaluation of Antarctic CORDEX simulations
- For *AntarcticClimate*<sup>21</sup> to help to design future updated Antarctic CORDEX simulations based on expert knowledge of model skill and specific climate sensitivity in the Antarctic and Southern Ocean region

### Enhanced Collaboration with CMIP6 Community

Associate Prof. Joellen Russel, *AntarcticClimate*<sup>21</sup> Objective Leader 'Future Projections' and a co-PI on the NSF funded "Southern Ocean Carbon and Climate Observations and Modelling" (SOCCOM) project, liaised with Prof. Veronika Eyring (Chair of CMIP-WCRP Panel) on AntClim21 to provide input to the community climate model evaluation diagnostics ([www.esmvaltool.org](http://www.esmvaltool.org)) for the next major climate model inter-comparison dataset (CMIP6). This model dataset is expected to provide the modelling support for future IPCC reports (AR6 and special reports).

### *AntarcticClimate*<sup>21</sup> Workshop

Our workshop "Earth System Model Projections of the Role of Antarctic and the Southern Ocean in the Global Climate of the 21st Century", 27-28 August 2016, SCAR OCS Kuala Lumpur has been confirmed with representation of all relevant SCAR SRPs and leading researchers in the field of climate projections, modern observations, past climate reconstructions and ecosystem analyses. The principle outcome of this workshop is to identify the key modelling parameters and their specific diagnostics to be included in CMIP6 and future modelling experiments to improve model skill in the Antarctic/Southern Region, increase comparability between models, and to support the assessment of impacts on the ecosystem.

## Future Plans and Expected Outcomes

For the remainder of the programme, the scientific focus of AntClim21 will support three principal outcomes:

- To increase the accessibility and use of model experiment results and their diagnostics by the wider science community, including biologists and social scientists. This will be achieved in collaboration with SOCCOM by developing an *AntarcticClimate*<sup>21</sup> data portal within the SOCCOM framework. The data portal will make available model experiment results and help to provide a clear and visual representation to the non-expert.
- To assess model performance with respect to the Antarctic / Southern Ocean region and/or important climate parameters specific to the Antarctic / Southern region. This will be done by investigating the skill of models for sensitive climate parameters such as sea ice extent, westerly winds etc. In addition, the development of guidelines to standardise diagnostics of data visualisation will enable improved inter-model comparisons.
- To provide improved climate projections for the Antarctic / Southern Ocean region. This will be achieved by identifying model ensemble projections (i.e. CMIP5 or CMIP6) of suitable models subgroups with high skill in a particular region, climate parameter or process.

## Recommendations/Expected Outcomes

*AntarcticClimate*<sup>21</sup> represents a large and growing community of active scientists working to improve future projection of Antarctica's role as driver of and its response to global change. We request the SSGs and SCAR Delegates to approve continued support for *AntarcticClimate*<sup>21</sup>. The outcome of this SCAR initiative will provide important leadership to improve modeling capability for future projections in time for inclusion in the IPCC AR6, it seeks multidisciplinary collaboration between existing SCAR initiatives, encourages new international research efforts, engages proactively in the development of the new generation of CMIP6 experiments, and promotes the integrates early and mid-career scientists.