

# Climate Change Research Centre Strategic Plan 2018-21

## Our Vision

The CCRC will be a world leading research centre in physical and biogeochemical climate science, and educate the Australian and global community about risks associated with climate variability and change.

	Research	Outreach	Education		Organisation
			Undergraduate	Postgraduate	
Summary	<p>We are globally influential, connected, well-funded by the ARC, and are known for research excellence. The current size and scale of the CCRC appear ideal for balancing breadth and interconnectedness.</p>	<p>Our science underpins all efforts to mitigate and adapt to climate change. We are engaged with government and private sector stakeholders seeking to manage climate risk, and we provide context to public through the media and other third parties.</p>	<p>We have two majors and one minor and teach into nine courses in the CLIM, BEES, GEOS, PHYS and MSCI streams. The recent uplift of CLIM1001 has significantly increased undergraduate enrolment.</p>	<p>We attract high quality students and benefit from the CLEX graduate program. Recent CCRC average is three students per continuing faculty member.</p>	<p>The CCRC is a flexible and family-friendly workplace with a great culture, dedicated academic and professional staff, and relative budget security. Our current physical space, a single floor of a large building, strongly supports centre cohesion.</p>
Objectives	<p><b>We will:</b></p> <ul style="list-style-type: none"> <li>a. Build links with stakeholders in climate risk assessment and/or climate change and human health.</li> <li>b. Maintain excellence in fundamental research to maintain our national leadership.</li> <li>c. Remain alert to fill niches in climate science we are currently missing.</li> <li>d. Be proactive in finding unconventional funding sources.</li> </ul>	<p><b>We will:</b></p> <ul style="list-style-type: none"> <li>a. Develop partnerships to expand our research into climate impacts and risk assessment.</li> <li>b. Inform state and federal governments about our policy-relevant research.</li> <li>c. Work with schools and the local communities to communicate the impact of our science.</li> <li>d. Make sure stakeholders are able to draw on the totality of relevant knowledge about the climate system.</li> </ul>	<p><b>We will:</b></p> <ul style="list-style-type: none"> <li>a. Strive to broaden the appeal of the CLIM majors and increase our contribution to quantitative courses in BEES.</li> <li>b. Work toward developing an additional large GenEd course by 2020.</li> <li>c. Reduce the numbers of lecturers in most courses.</li> <li>d. Increase ECR involvement and mentoring in teaching.</li> </ul>	<p><b>We will:</b></p> <ul style="list-style-type: none"> <li>a. Aim for an average of three postgraduate students per faculty member.</li> <li>b. Invest in vacation scholarships to attract more postgraduate students.</li> </ul>	<p><b>We will:</b></p> <ul style="list-style-type: none"> <li>a. Seek to raise our profile within UNSW.</li> <li>b. Continue to align the Centre with UNSW's Strategy 2025.</li> <li>c. Ensure that CCRC continues to get necessary Admin and IT support.</li> <li>d. Maintain or strengthen links with other schools and faculties at UNSW.</li> <li>e. Work actively to ensure the centre is inclusive and welcomes diversity.</li> </ul>

# CCRC Strategic Plan 2018 - 2021

## Introduction

The CCRC is a multi-disciplinary research group with key areas of research expertise in Atmosphere, Ocean, Land and the Carbon Cycle. It is one of the largest university research facilities of its kind in Australia. The reputation of the CCRC has attracted young and energetic staff members, which has fostered a very healthy group dynamic. The CCRC hosts 14 academic staff members, all of whom have built successful groups of research associates and doctoral students, including early-to mid-career researchers on independent fellowships. Staff members of the CCRC are in leadership positions for numerous international (IPCC, WCRP, PAGES, WMO) and national (National Academy, Science advisory panel to Federal Government) committees. The Centre is capably supported by a small team of professional staff.

The CCRC is a key pillar supporting the ARC Centres of Excellence for Climate System Science (2012-2018) and Climate Extremes (2018-2025). The CCRC has a successful track record in attracting significant and prestigious research funding, predominately Category 1 grants and fellowships from the Australian Research Council.

The CCRC engages in high-profile research, accounting for example for a very high proportion of UNSW's publications in top journals such as *Science* and *Nature* in recent years despite the modest size of the Centre. The Centre's work is highly cited and collaborative in nature. We work with researchers and stakeholders from leading institutions in Australia and around the world.

The CCRC is managed by the Director in consultation with a steering committee, which is currently comprised of the Director, the Deputy Director, the Director of the ARC CoE CLEX and the Centre Manager. The management of the Centre also includes quarterly staff meetings where matters of importance to the Centre are discussed openly.

An advisory committee is constituted to provide the CCRC with strategic advice from outside the Centre. This committee includes members both internal and external to UNSW and is nominally headed by the Dean of Science (or their delegate). It meets at least once per year.

## Alignment with UNSW's Strategy 2025

The CCRC contributes to and drives the first priority of UNSW's Strategy 2025, Academic Excellence in Research, through its high-profile basic research. The Strategy 2025's second priority, Social Engagement and Justice, led to the creation of the Grand Challenges programmes, of which the first was identified as Climate Change. CCRC researchers continue to engage with UNSW Grand Challenges and Futures Initiatives. The third priority is a commitment to achieving Global Impact. We contribute to this via the very nature of our science, by literally studying the globe, as well as through our international reputation as a leading research centre, strong international collaborations, and the global importance and impact of our expertise, climate change.

## Vision Statement

The CCRC will be a world leading research centre in physical and biogeochemical climate science, and educate the Australian and global community about risks associated with climate variability and change.

## Mission Statement

The CCRC actively engages in world-class research focused on climate system science to help better understand, predict, and adapt to climate variability and climate change. We also educate UNSW students, support STEM, engage in public outreach, and advise the government and private sectors on climate-related science and the causes and consequences of global warming.

## Strategy

Our strategy has four pillars to underpin success

- Excellence in research
- Excellence in informing government, business and the public
- Quality in education
- An efficient organisation

### 1. Research Strategy

We are globally influential, connected, well funded by the ARC, and are known for research excellence. The current size/scale of the CCRC appears ideal for balancing breadth with interconnectedness. Identified weaknesses include a lack of industry links and a relatively narrow scope (focus on IPCC WG1). Opportunities include diversification of funding sources (such as industry, citizen science, philanthropy); exploitation of existing UNSW schemes (SHARP, Scientia, Futures); and potentially widening of our research scope. Identified threats are reduced future research funding (especially post-CLEX) and/or computing resources; loss of key staff; and shifts in the political landscape.

We will

- a. Venture into WG2/WG3 and build links with stakeholders in climate risk assessment and/or climate change and human health.
- b. Maintain excellence in fundamental research to maintain our national leadership.
- c. Remain alert to fill niches we are currently missing (e.g. cryosphere; physical hydrology; atmospheric dynamics).
- d. Be proactive in finding unconventional funding sources and schemes.

### 2. Outreach

Our science underpins all efforts to mitigate and adapt to climate change. We are engaged with government and private sector stakeholders seeking to manage climate risk, and we provide context to the public through the media and other third parties.

We will

- a. Develop partnerships to expand our research into climate impacts and risk assessment.
- b. Inform state and federal governments about our policy-relevant research.
- c. Work with schools and the local communities to communicate our passion for science, and the value and impact of our science.
- d. Collaborate with those seeking to manage climate risk to make sure they are able to draw on the totality of relevant knowledge about the climate system.

### 3. Education

#### 3a. Undergraduate

Our main interests in undergraduate teaching are (a) helping to enlighten the student body about important topics, (b) attracting PhD students, and (c) meeting our obligations to the Faculty of Science. We have currently two majors and one minor and teach into nine courses in the CLIM, BEES, GEOS, PHYS and MSCI streams. Current teaching loads remain relatively light by UNSW standards. The move online of CLIM1001 has been a recent success, increasing its annual student numbers by over 400%. Identified opportunities include profile-

raising opportunities (e.g. by offering courses in the Gen Ed stream that reach students with a variety of backgrounds and interests), opportunities to broaden scope (e.g. Plus Alliance, work with others in applied areas such as renewable energy); and giving more teaching opportunities to ECRs. Identified weaknesses are small student numbers in our programs.

We will

- a. Strive to broaden the appeal of the CLIM majors.
- b. Increase our contribution to quantitative courses in BEES.
- c. Work toward developing an additional large Gen Ed course by 2020.
- d. Reduce the numbers of lecturers in non-Gen Ed courses.
- e. Increase ECR involvement in teaching.

### **3b. Postgraduate and undergraduate research students**

Current CCRC average is three students per tenured faculty member (only two if convertible contracts are taken into account). We attract high quality students and we benefit from the CLEX graduate program. Identified threats include the potential loss of educational support and resources, and support for HDR students for the post-CLEX era. We recruit a large number of postgraduate students through summer research projects and a very small number through our undergraduate programs.

We will

- a. Aim for an average of three postgraduate students per faculty member.
- b. Invest in vacation scholarships to attract more PhD students.

## **4. Organisation**

The CCRC is a flexible and family-friendly workplace with a great culture, dedicated academic and professional staff, and relative budget security. The current space fits our needs. Identified opportunities include UNSW's "Strategy 2025", which defines climate change as a key element; a supportive Dean of Science; collaboration with other groups at UNSW such as the oceanography group in the School of Mathematics and Statistics; and leverage and benefits of CLEX and other external networks. Identified weaknesses include relatively low visibility within UNSW and increasing administration overheads on research staff. Identified threats include long-term funding, especially post-CLEX; loss of professional staff and IT support.

We will

- a. Seek to raise our profile within UNSW through campus involvement, outreach activities, improved signage and other means including (b) and (f) below.
- b. Change the composition of CCRC's Advisory Board to help achieve objectives in this Strategic Plan.
- c. Advocate to ensure that CCRC continues to get necessary Admin and IT support.
- d. Ensure that we continue to enjoy a physical space that promotes centre cohesion.
- e. Maintain or strengthen links with other schools or faculties at UNSW such as Maths, Physics, Engineering, Photovoltaics and Public Health.
- f. Continue to align the Centre with UNSW's Strategy 2025 and the Faculty of Science strategic directions.
- g. Work actively to ensure the centre is inclusive and welcomes diversity.