



STRATEGIC PLAN

CLIMATE CHANGE RESEARCH CENTRE

2022 - 2026

PREAMBLE

Climate change is one of the greatest threats to future human prosperity and the natural world. It is a scientific, cultural, and technological problem that now demands attention not only from academia but from all communities. Facing this challenge requires, among other things, that it be understood as fully as possible and that this understanding be communicated as widely as possible especially to those making important decisions affecting our future.

The Climate Change Research Centre (CCRC) at UNSW is a multi-disciplinary research group housing expertise in the key areas of Earth's climate: atmosphere, ocean, land, cryosphere, and the carbon cycle. Researchers at the CCRC apply fundamental scientific principles to pressing questions on climate dynamics, climate variability, global climate change, and extremes of weather and climate. The CCRC interacts with a variety of schools, centres and faculties across UNSW. Within the Faculty of Science, particularly strong research and teaching synergies exist between the Centre and the Schools of Mathematics and Statistics, Physics and other centres within the School of Biological, Earth and Environmental Sciences (BEES). The CCRC also provides the scientific foundations to groups and centres across UNSW working on climate impact and climate risk-related problems, such as the Faculties of Law, Built Environment, Medicine and Engineering. CCRC's research focus is innovative and arguably unique among university groups worldwide, and it is the largest hub of such research in the Australian region.

An Academic at the CCRC will lead an active research program contributing significant scientific advances in their respective field. They will produce quality publications in Tier 1 journals, successfully attract external funding and supervise graduate students with successful completions. They will deliver quality undergraduate teaching as determined through discussions with the Centre Director with good student feedback. They will actively participate in centre activities, have a willingness to take on leadership roles and show engagement with the discipline and/or community. To support this, we will develop a workload model that acknowledges efforts toward all aspects of the strategic plan. The CCRC community is of course much larger than its academic staff. Post-doctoral research fellows, professional and technical staff, and our research student cohorts all contribute to the realisation of this plan, participate fully in the collegiate life of the Centre, and will be supported in their careers.

This five-year strategic plan (2022-2026) is built on five pillars, each equally important to achieve our vision:

The CCRC will be a world-leading research centre in climate science, educating and enabling the Australian and global community to deal with risks associated with climate variability and climate change

| 1 LEADING CLIMATE RESEARCH

We will be a globally recognised leading centre of research, knowledge, discovery, and expertise in core areas of climate science.

1.1 ACHIEVE SUSTAINED EXCELLENCE IN FUNDAMENTAL RESEARCH TO MAINTAIN OUR NATIONAL AND INTERNATIONAL LEADERSHIP

- Continue to focus on the fundamental physical and biogeochemical sciences of the Earth's climate and the use of that science to help solve important problems. Maintain research strengths in the key components of the climate system
- Maintain a collaborative and nurturing working environment that values research excellence (*also see 5.1*)
- Build an academic staff succession plan to ensure sustained excellence
- Maintain an active seminar series, attracting speakers from outstanding national and international research groups
- Ensure that CCRC staff lead and/or participate in significant national and international research programs
- Continue to apply for externally funded fellowships commensurate with academics' career stage and eligibility

1.2 IDENTIFY AND ESTABLISH STRATEGIC RESEARCH LINKS WITH SELECT GROUPS WITHIN UNSW, AUSTRALIA AND OVERSEAS

- Maintain and strengthen links to world-leading research groups nationally and internationally, for example, through collaborations, sabbaticals, and co-supervision of HDR students
- Use links with other units at UNSW, government, and stakeholders to help identify emerging research needs, opportunities, and gaps
- Establish our leading position in climate science at UNSW, and support groups working on impacts and solutions

1.3 MAINTAIN SUCCESS IN COMPETITIVE EXTERNAL FUNDING AND DEVELOP STRATEGIES TO WIDEN OUR FUNDING SOURCES

- Support staff via personalised strategies to apply for Cat 1 fellowships and research grants, and continue networking with government and industry groups that could lead to external funding
- Where possible, seize opportunities to secure significant new Cat 1 funding (e.g., ARC centres and programs, special research initiatives, etc.)
- Maintain close communication with UNSW Knowledge Exchange and Industry Engagement teams in seeking opportunities in industry engagement
- Maintain an active engagement with Philanthropy via the UNSW Foundation to identify funding opportunities

| 2 OUTREACH AND INFLUENCE

We will engage with stakeholders, including government, business, schools, the public and the media, to better understand and communicate climate risk.

2.1 DEVELOP PARTNERSHIPS WITH GROUPS ADDRESSING CLIMATE IMPACTS, RISK, AND/OR ADAPTATION, FOR EXAMPLE, IN BUSINESS, FINANCE, HEALTH, AGRICULTURE, AND THE BUILT ENVIRONMENT

- Strengthen engagement with the relevant sectors through conversations, presentations, and targeted events, underpinned by relevant research, to guide their assessment of climate risk at national, state, and local scales
- Maintain or expand collaboration with the relevant sectors through research and targeted events
- Communicate our research expertise of relevance to climate impacts and climate risk stakeholders via our website, social media, LinkedIn, etc.

2.2 COLLABORATE WITH LOCAL, STATE, AND FEDERAL GOVERNMENTS TO ENSURE OUR RESEARCH HELPS ADDRESS POLICY NEEDS

- Develop a set of portfolio statements for CCRC to describe our science and capabilities to state and federal governments
- Ensure strong engagement between CCRC and the federal government to ensure our research meets areas of national priority
- Ensure strong engagement between CCRC and the NSW government to deliver research that supports government and government agencies
- Provide briefings to governments at all levels to maintain our profile and influence on climate science, climate impacts and climate risk

2.3 WORK WITH SCHOOLS AND THE LOCAL COMMUNITIES TO COMMUNICATE THE IMPACT OF OUR SCIENCE

- Actively support UNSW activities in areas of STEM and science outreach to school students
- Maintain a high profile across our local community to help UNSW maintain a high and relevant profile in STEM

2.4 COMMUNICATE OUR RESEARCH VIA THE MEDIA TO THE PUBLIC, TO INFORM THE PUBLIC AND TO RAISE UNSW'S PROFILE IN CLIMATE RESEARCH NATIONALLY AND INTERNATIONALLY

- Ensure a long-term partnership with media organisations by facilitating access by journalists to CCRC expertise
- Maintain an active website that helps inform the media and the public around CCRC research, its impact, and its relevance
- Ensure our social media profile is maintained and effective
- Develop targeted brochures linking our capabilities to climate solutions providers

| 3 EDUCATION

We will provide an education program from undergraduate through to postgraduate, so our students are well-positioned for research, business, industry, and policy roles.

3.1 PROVIDE AN UNDERGRADUATE PROGRAM THAT ATTRACTS STUDENTS, CONTRIBUTES TO THE FACULTY'S EDUCATIONAL GOALS AND GRADUATES STUDENTS WITH THE NECESSARY SKILLS TO ENHANCE EMPLOYABILITY

- Move Climate Science into Bachelor of Science, keep Climate Dynamics in Advanced Science

- Online strategies to attract undergraduate students: produce videos, improve website content, targeted posts to Facebook and Twitter (*also addresses 3.3*) – publicise teaching ratings and employment opportunities and achievements on the website
- Micro-credentials and executive education
 - Look to partner with Business School and others on short courses and/or teaching into MBAs
 - Watch Project Horizon (program to deliver bespoke courses to business)
 - Possibly build on material from CLIM1001 / CLIM2002 for either of above
- Pursue new course aiming for broad appeal, e.g. scientific reasoning (*also addresses 4.2 if done with other schools*)
- Conduct a thorough review of CCRC undergraduate offerings, including our majors and minor in 2022
- Promote our courses as required electives in other streams if possible (*may also address 3.2*)

3.2 ENSURE OUR UNDERGRADUATE PROGRAM ENABLES STUDENTS TO UNDERTAKE HONOURS AND PH.D.S IN A RESEARCH-INTENSIVE ENVIRONMENT OR LEADS TO OTHER CAREER PATHWAYS IN CLIMATE-RELATED AREAS

- Communicate importance of climate science in industry (e.g., APRA requirements)
- Optimise employability of graduates with training in climate science and climate risk (*also addresses 3.1*)

3.3 WORK WITH SCHOOLS AND THE LOCAL COMMUNITIES TO COMMUNICATE THE IMPACT OF OUR SCIENCE

- Continue to invest in UG research projects (e.g., summer scholarships) (*also addresses 3.2*)
- Visibility/outreach measures discussed under 3.1 and elsewhere, including Twitter (e.g., tweet every student arrival and completion)
- Reach UG students by teaching into 3rd-year courses in potential feeder Schools (Maths, Physics, Engineering) -- e.g., MATH3261 GFD, MATH3101 Computational Mathematics
- Increase postgrad funding by budgeting for scholarships in grant applications
- Increase postgrad funding via co-sponsorship of Ph.D. scholarships with industry partners, possibly including through ARC Industrial Transformation Training Program (*also addresses 3.4*)
- Review processes around Ph.D. student admission decisions

3.4 GRADUATE HONOURS, MASTERS AND PH.D. STUDENTS WITH THE SKILLS AND THAT BEST PLACE THEM FOR A VARIETY OF FUTURE CAREER PATHS

- Continue to offer exceptional mentoring of Ph.D. cohort via semi-annual reviews and student buddies for incoming students
- Determine and articulate a set of necessary graduate attributes, and continue skills assessment interviews upon entrance and exit interviews relating to these attributes
- Seek industry internship opportunities and strongly encourage postgrad students to undertake them where appropriate
- Ensure appropriate coursework is available to postgraduate students where needed, including co-badging/reuse of UG courses
- Career mentoring by inviting industry, government, and research experts, including CCRC alumni, to give presentations to the Ph.D. cohort (*also addresses 5.4*)
- Run an annual CV-writing, job application, and interview workshop

| 4 ENABLING CHANGE

We will seek to enable progress on broader climate problems and solutions through collaboration and engagement.

4.1 BE THE FOUNDATIONAL SCIENCE PROVIDER FOR ALL APPLIED CLIMATE RESEARCH AT UNSW

- Chart our existing network of UNSW collaborators, and identify any new climate-relevant partners across UNSW
- Promote new cross-disciplinary initiatives in climate at UNSW where valuable
- Initiatives described under Objectives 1 & 2 toward visibility/outreach

4.2 ENHANCE OUR VISIBILITY AT UNSW BY STRENGTHENING LINKS TO OTHER SCHOOLS AND FACULTIES AT UNSW

- Develop a profile for CCRC, including appropriate UNSW branding
- Encourage Ph.D. co-supervisors from other relevant schools, and offer CCRC co-supervision to these Schools
- Strengthen collaboration with groups addressing climate impacts, risk, and/or adaptation

4.3 CONTRIBUTE TO EXTERNAL GROUPS SEEKING SOLUTIONS TO CLIMATE CHANGE

- Advertise the capabilities we offer clearly on our website
- Develop a “portfolio brief” for external advertising and profiling
- Maintain strong social media presence

4.4 CONTRIBUTE TO, AND ALIGN WITH, UNSW’S AND THE FACULTY’S OVERALL STRATEGIES

- Regularly review UNSW and Faculty of Science strategies and ensure we align with them
- Contribute, as a Centre, to strategic planning processes launched

| 5 ORGANISATIONAL COHESION

We will maintain an outstanding work environment in support of all staff and students in a collocated facility.

5.1 WORK ACTIVELY TO ENSURE THE CENTRE IS INCLUSIVE, WELCOMES DIVERSITY AND PROVIDES A SAFE, SUPPORTIVE, AND NURTURING ENVIRONMENT FOR EVERYONE

- Maintain a strong focus on building a culture that is collegial and respectful, ensuring all voices have an opportunity to be heard
- Within UNSW guidelines, implement flexible work policies that enable staff and students to balance work and outside commitments
- Implement recruitment strategies that seek to address the under-representation of women and other minority groups in STEM
- Ensure there is a formal communication channel between students and staff, such as inviting the student representative to all staff meetings

- Maintain GERL lunches and other activities that raise EDI awareness
- Facilitate social and networking activities within the Centre, such as post-APR gatherings
- Encourage attendance at CCRC seminars and Ph.D. exit seminars

5.2 STRIVE TO MAINTAIN AN EFFECTIVE AND SUSTAINABLE OPERATIONAL ADMINISTRATIVE ENVIRONMENT

- Implement a professional staffing structure that best supports the Centre's endeavours across the range of strategic, operational, and administrative functions
- Work with the Faculty of Science to ensure the Centre's mid to long term budget model is sustainable
- Diversify the CCRC's income stream to ensure its operational needs are fully met

5.3 MAINTAIN EXCELLENCE IN THE IT ENVIRONMENT, ENABLING THE USE OF FIT FOR PURPOSE TOOLS AND RESEARCH INFRASTRUCTURE

- Seek to maintain an IT environment that enables world-leading, cutting-edge research
- Routinely analyse and forecast the Centre's HPC and data storage requirements and ensure staff and students are following best-practice in a resource-constrained environment
- Maintain access to expert technical support through UNSW
- Actively lobby UNSW to ensure an optimal balance of on-campus infrastructure and access to major facilities such as NCI

5.4 ENHANCE PROFESSIONAL AND SCIENTIFIC DEVELOPMENT FOR OUR STUDENTS, ECRS AND MCRS

- Set an expectation for supervisors to conduct a training and development needs analysis with commencing research students and ECRs to understand their aspirations and open appropriate training opportunities
- Continue to assess student progress via the established PGR process, which ensures students meet with their panels at least twice a year
- Capitalise on our alumni network to run periodic workshops and seminars on career-relevant topics such as jobs outside academia, building a profile, industry engagement, etc.
- Provide leadership development opportunities to all Faculty and Fellows such as portfolio responsibilities and designated roles in the Centre such as Deputy Director, HDR coordinator, etc.

