
# Research Fellow (Pacific Decadal Variability)

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| **Department/Unit** | School of Earth, Atmosphere and Environment |
| **Faculty/Division** | Faculty of Science |
| **Classification** | Level A |
| **Work location** | Clayton campus |
| **Date document created or updated** | April 2018 |

## Organisational Context

Everyone needs a platform to launch a satisfying career. At Monash, we give you the space and support to take your career in all kinds of exciting new directions. You'll have access to quality research, infrastructure and learning facilities, opportunities to collaborate internationally, as well as the grants you'll need to publish your work. We're a university full of energetic and enthusiastic minds, driven to challenge what's expected, expand what we know, and learn from other inspiring, empowering thinkers. Discover more at www.monash.edu.

The **School of Earth, Atmosphere and Environment** is located in the Faculty of Science (www.monash.edu/science/) and has close collaborations with other Schools, such as Physics, Chemistry and Biology, and with other Faculties, such as Business and Economics, Arts, and Engineering. The School has strong links with outside institutions such as CSIRO, the Bureau of Meteorology, the Australian Synchrotron, and Geoscience Australia as well as a large number of research institutes and universities globally.

The School is highly multidisciplinary with very active groups in Dynamical Meteorology, Climate Dynamics, Cloud Processes, Turbulence and Atmospheric Convection, Biosphere-Atmosphere Interaction, Climate Impacts and Adaptation, Atmospheric Modelling, Urban Climate, Geodynamics, Tectonics and Structural Geology, Environmental Mineralogy, Synchrotron Geoscience and Geochemistry, Hydrogeology and Hydrochemistry, Economic Geology and Petrology, Soil Science, Environmental Earth Science, Applied Geophysics, Geomorphology, GIS and Remote Sensing. The School is actively involved in several research Centres, such as the Australian Research Council's Centre of Excellence for Climate System Science, the Australian Research Council's Centre of Excellence for Climate Extremes, the Corporative Research Centre for Water Sensitive Cities and the 3D ALIVE (Applied Laboratory for Immersive Visualisation Environment).

The working environment for the position is the **Atmosphere and Climate group** which is based in the School of Earth, Atmosphere and Environment. The particular strengths of the group can be found at https://www.monash.edu/science/schools/earth-atmosphere-environment/research.

This group forms part of the newly ARC-Funded **Centre of Excellence for Climate Extremes** (see http://www.climateextremes.org.au/). The ARC Centre of Excellence for Climate Extremes is a major 7-year initiative supported by the Australian Research Council. It is a consortium of five Australian universities with a suite of outstanding national and international Partner Organisations as collaborators. The Centre of Excellence research agenda encompasses interconnected research programs focused on Heatwaves, Rainfall, Drought and Variability in the Tropics and Extratropics.

The ARC Centre of Excellence for Climate Extremes will provide a supportive and enriching workplace for Early Career Researchers. In particular, the Centre has a strong commitment to equity, diversity and inclusion. In order to boost opportunities for researchers from under-represented groups, we will offer a competitive fellowship scheme to resource leadership training, career development and other programs in addition to the extensive opportunities already offered in the Centre.

## Position Purpose

Under the umbrella of the ARC Centre of Excellence for Climate Extremes (CoE), the successful applicant will combine observational analysis and numerical modelling approaches to understand the causes of decadal-scale climate variability in the tropical Pacific Ocean and the influence of such variability on tropical weather and climate extremes. The successful applicant will conduct research focusing on the role of inter-basin interactions in determining the evolution of tropical Pacific decadal variability and how these interactions are mediated by the atmospheric circulation. The research may include idealised and comprehensive modelling of the coupled ocean-atmosphere system and statistical analysis of observed and modelled climate extremes depending on the interests of the successful applicant and the requirements of the project. The work will be carried out in close collaboration with other CoE researchers at Monash University and the other four CoE nodes across Australia.

**Reporting Line:** The position reports to Dr Shayne McGregor

**Supervisory Responsibilities:** Not applicable

**Financial Delegation:** Not applicable

**Budget Responsibilities:** Not applicable

## Key Responsibilities

Specific duties required of a Level A research-only academic may include:

1. Investigate the relationship between decadal-scale variability in the Pacific region and weather and climate extremes in Australia (and other tropical regions) in observations and in climate models
2. Conduct idealised and/or comprehensive simulations of the tropical ocean-atmosphere system in order to investigate the influence of inter-basin interactions on tropical Pacific variability
3. Assist in supervising honours and postgraduate students working on the project
4. Occasional contributions to teaching in relation to their research project(s)
5. Participate in group activities, including small amounts of group-related administration
6. Present research at national and international conferences
7. Prepare research papers for submission to quality refereed journals

## Key Selection Criteria

### Education/Qualifications

1. The appointee will have:
    - A doctoral degree in atmospheric science, oceanography or a related field

### Knowledge and Skills

2. Demonstrated analytical and manuscript preparation skills including a track record of authoring refereed research publications
3. Ability to analyse key climate dynamical processes innovatively and independently
4. Demonstrated ability to analyse large, complex datasets such as geophysical observations or output from numerical models, including the application of appropriate statistical techniques
5. Capacity to design and conduct simulations/experiments using numerical models of the atmosphere and/or ocean
6. Well-developed planning and organisational skills, with the ability to prioritise multiple tasks and set and meet deadlines
7. Excellent written communication and verbal communication skills with proven ability to produce clear, succinct reports and documents
8. A demonstrated capacity to work in a collegiate manner with other staff in the workplace

## Other Job Related Information

- Travel to other campuses of the University may be required
- There may be a requirement to work additional hours from time to time
- There may be peak periods of work during which taking of leave may be restricted

## Legal Compliance

Ensure you are aware of and adhere to legislation and university policy relevant to the duties undertaken, including: Equal Employment Opportunity, supporting equity and fairness; Occupational Health and Safety, supporting a safe workplace; Conflict of Interest (including Conflict of Interest in Research); Paid Outside Work; Privacy; Research Conduct; and Staff/Student Relationships.