# Position Details

## CSIRO Early Research Career (CERC) Postdoctoral Fellowship– CSOF4

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| The following information is for applicants | |
| Advertised Job Title | CSIRO Postdoctoral Fellowship in El Niño-Southern Oscillation Under Greenhouse Warming |
| Job Reference | 72043 |
| Tenure | Specified Term of 2 years  Full-time |
| Salary Range | AU$86,434 to AU$94,679 pa + up to 15.4% superannuation |
| Location(s) | Aspendale VIC |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | All candidates |
| Position reports to the | Research Team Leader |
| Client Focus – Internal | 5% |
| Client Focus – External | 95% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Dr. Guojian Wang via email at [Guojian.Wang@csiro.au](mailto:Guojian.Wang@csiro.au) or phone +61 3 9239 4416;  Dr Agus Santoso via email: [a.santoso@unsw.edu.au](mailto:a.santoso@unsw.edu.au) or phone: +61 4 1970 1737.  Dr. Wenju Cai via email: [Wenju.Cai@csiro.au](mailto:Wenju.Cai@csiro.au) or phone: +61 3 9239 4419. |
| How to apply | Apply online at <https://jobs.csiro.au/>  Internal applicants please apply via **Jobs Central**  If you experience difficulties when applying, please email [careers.online@csiro.au](mailto:careers.online@csiro.au) or call 1300 984 220.  Please submit one document addressing to the Selection Criteria and including your CV at the end. |

### Role Overview

**CSIRO Early Research Career (CERC) Postdoctoral Fellowships** provide opportunities to scientists and engineers who have completed their doctorate and have less than three years relevant postdoctoral work experience. These fellowships aim to develop the next generation of future leaders of the innovation system through:

* A differentiated career development program to deliver capability excellence and breadth across all facets of the national innovation system.
* Research training via strategic research and development projects with a clear focus that will deliver real impact through science and engineering excellence;
* An innovative culture supporting the development and demonstration of original thinking and expertise leading to peer-recognition; and
* Opportunities to develop skills and experience in collaborative research teams to effectively work within national and global multi/transdisciplinary and multi-stakeholder environments.

**The Postdoctoral Fellow will be appointed for two years or part time equivalent, with a possible extension for a third year depending on funding and alignment with research strategy.**

This position arises from establishment of the *Centre for Southern Hemisphere Oceans Research (*CSHOR), which is a joint initiative between the Qingdao National Laboratory for Marine Science (China), CSIRO, University of New South Wales (UNSW) and University of Tasmania (UTAS). The CSHOR objective is to increase investment in ocean-climate research in order to improve our understanding of how the southern hemisphere oceans influence global and regional climate, and how the climate influences these oceans.

The position will be based at CSIRO, to work on one of many projects funded by CSHOR, to study dynamics of El Niño-Southern Oscillation (ENSO), the impacts, and the response to climate change.

### Duties and Key Result Areas:

The CERC Postdoctoral Fellow will:

* + Under guidance of the supervisors, lead the effort that addresses how the long-term mean state of the equatorial Pacific will change under global warming.
  + Use outputs from about 60 climate models participating in the Intergovernmental Panel on Climate Change to examine the impacts of future climate change on ENSO.
  + Formulate nonlinear theoretical frameworks to analyse ENSO nonlinear Bjerknes feedback, and nonlinear dynamical heating, and nonlinear thermodynamical feedback that govern ENSO asymmetry and nonlinearity.
  + Conduct advanced statistical analyses to extract the relevant information that can be used to understand ENSO mechanism, linkage, variability, long-term changes and impact of model biases.
  + Where need arises, devise and run model experiments to identify key processes that govern changes in ENSO under specific forcing and climate conditions.
  + Carry out innovative, impactful research of strategic importance to CSIRO that will, where possible, lead to novel and important scientific outcomes.
  + Recognise and exploit opportunities for innovation and the generation of new theoretical perspectives, and progress opportunities for the further development or creation of new lines of research
  + Carry out research investigations requiring originality, creativity and innovation
  + Record, manage, and analyse data/information using relevant domain data science techniques.
  + Proactively undertake development to grow effective researcher capabilities to support career goals.
  + Adhere to the spirit and practice of CSIRO’s Code of Conduct, Health, Safety and Environment procedures and policy, Diversity initiatives and Making Safety Personal goals.
* Other duties as directed.

[**The CERC Postdoctoral Fellow learning and development program**](http://www.csiro.au/en/Careers/Student-and-graduate-programs/Postdoctoral-fellowships)is developed between the CERC Postdoctoral Fellow and their CSIRO supervisor. The program will focus on enhancing the Fellows’ capabilities to the level expected of an independent researcher and will include on-the-job and course-based development encompassing:

* Discipline-specific techniques and protocols
* Professional growth
* Project management
* Communication and influencing skills
* Working and collaborating with others

## **Required Competencies:**

* **Teamwork and Collaboration:** Cooperates with others to achieve organisational objectives and may share team resources in order to do this. Collaborates with other teams as well as industry colleagues.
* **Influence and Communication:** Uses knowledge of other party's priorities and adapts presentations or discussions to appeal to the interests and level of the audience. Anticipates and prepares for others reactions.
* **Resource Management/Leadership:** Allocates activities, directs tasks and manages resources to meet objectives. Provides coaching and on the job training, recognises and supports staff achievements and fosters open communication in the team.
* **Judgement and Problem Solving:** Investigates underlying issues of complex and ill-defined problems and develops appropriate response by adapting/creating and testing alternative solutions.
* **Independence:** Recognise and makes immediate changes to improve performance (faster, better, lower cost, more efficiently, better quality, improved client satisfaction).
* **Adaptability:**Copes with ambiguity or situations that lack clarity. Adapts readily to changing circumstances and new responsibilities (which may include activities outside own preferences) in the interests of achieving team objectives. Recognises the need for and undertakes personal development as a result of changes.

## **Selection Criteria**

#### Essential

*Under CSIRO policy only those who meet all essential criteria can be appointed.*

1. A doctorate in a relevant discipline area, such as meteorology, oceanography or climatology.

***Note: To be eligible for this role you must have at least one year of postdoctoral research experience, but no more than six full-time equivalent years of experience since confirmation of your doctorate at the end of this postdoctoral term.***

1. Well-developed knowledge of nonlinear ENSO dynamics and the feedback processes (nonlinear dynamical heating, nonlinear Bjerknes feedback, nonlinear thermodynamics).
2. Demonstrated strong ability in writing computer programs, in data analysis method/approach and techniques, and in handling large dataset.
3. High level written and oral communication skills with the ability to represent the research team effectively internally and externally, including the presentation of research outcomes at national and international conferences.
4. A sound history of publication in peer reviewed journals and/or authorship of scientific papers.
5. A record of science innovation and creativity, including the ability & willingness to incorporate novel ideas and approaches into scientific investigations.

## **Desirable:**

1. Demonstrated experience and skill in sophisticated statistical methods.

To be appointed as a CERC Postdoctoral Fellow within CSIRO, candidates will be expected to commence employment by 1 July 2021.

Special Requirements

Appointment to this role may be subject to conditions including provision of a national police check as well as other security/medical/character clearance requirements.

* The successful candidate will be asked to obtain and provide evidence of a National Police Check or equivalent. Please note that people with criminal records are not automatically deemed ineligible. Each application will be considered on its merits.
* If the successful candidate is not an Australian Citizen or Permanent Resident, they may be required to undergo additional security clearances, which may include medical examinations and an international standardised test of English language proficiency (i.e. IELTS test).- https://ielts.com.au/

**Our value proposition**

We want CERC Postdoc Fellows to join our world class science, engineering and digital teams to solve big, complex problems that make a real difference to the future of Australia and the world.

You'll get to work with some of the most talented minds in their fields, not just in Australia, but in the world. At CSIRO, we spark off each other, learn from each other, trust each other and collaborate closely to achieve more than we could individually.

CSIRO Early Research Career (CERC) Postdoctoral Fellow Experience Employee Value Proposition (EVP). Find out more [here](https://www.csiro.au/en/careers/postdoctoral-fellowships)!

## **About CSIRO:**

We solve the greatest challenges through innovative science and technology. To find out more visit us [online](http://www.csiro.au/)!

Find out more about CSIRO [Oceans and Atmosphere](https://www.csiro.au/en/Research/OandA)

CSIRO is a values-based organisation.  In your application and at interview you will need to demonstrate behaviours aligned to our values of:

* 1. People First
  2. Further Together
  3. Making it Real
  4. Trusted