# 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 Ocean-Atmosphere Modelling |
| Job Reference | 78023 |
| Tenure | Specified Term of 2 years (+ 1 year extension) Full-time  |
| Salary Range | AU$89,926 to AU$98,504 pa + up to 15.4% superannuation |
| Location(s) | Hobart, TAS / Melbourne, VIC |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | * Australian/New Zealand Citizens and Australian Permanent Residents
* Australian temporary residents currently residing in Australia (visa sponsorship may be provided to eligible onshore candidates)
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| Position reports to the | Project Leader (Research Scientist, Coastal Biogeochemical Modelling) |
| Client Focus – Internal | 33% |
| Client Focus – External | 67% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Mark Baird via email at mark.baird@csiro.au  |
| 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 or call 1300 984 220. |

### 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 fellowship will be **appointed for two years or part time equivalent, with a third year available contingent on the extension of external funding.**

The Great Barrier Reef (GBR), the world’s largest coral reef ecosystem, is under increasing anthropogenic stresses. The multi-institution Reef Restoration and Adaptation Program (<https://gbrrestoration.org/>) is investigating GBR-wide scale interventions to improve the future health of the Great Barrier Reef (https://www.nature.com/articles/d41586-021-02290-3). The postdoctoral fellow will work within a team of scientists in CSIRO and partner agencies to predict the impacts of marine cloud brightening on coral bleaching on the Great Barrier Reef. This opportunity is based within the Coast and Ocean Research Program of the CSIRO Oceans and Atmosphere Business Unit.

The Postdoctoral Fellow will work as part of a collaborative and multidisciplinary modelling team: from atmospheric to oceanographic and coral physiological modelling. The team is mainly based at CSIRO Hobart and CSIRO Aspendale with additional collaborators at the Southern Cross University, Queensland University of Technology and University of Melbourne.

The Postdoctoral Fellow will contribute to the development of a coupled atmospheric – ocean – coral bleaching model system. They will conduct simulations of the coupled system on the National Computing Infrastructure and analyse the model output. The atmospheric model is the Australian Community Climate and Earth System Simulator which includes a sophisticated aerosol module. The ocean hydrodynamic – biogeochemical model is the CSIRO Environmental Modelling Suite (<https://research.csiro.au/cem/software/ems/>) used in the eReefs Project

Through the simulation of the impacts of aerosol injection in the coupled atmosphere ocean model, the postdoctoral fellow will contribute to science delivery at four levels:

* assessing the effectiveness of marine cloud brightening on reducing coral bleaching;
* optimising the design of aerosol injection strategies to maximise the cost vs benefit ratio of the intervention.
* improving the prediction of coral bleaching on the GBR through improvements in the eReefs modelling system.
* assessing the potential for unintended downstream impacts

By contributing to these goals, the postdoctoral fellow will be an important component in the Reef Restoration and Adaptation Program’s goal of developing a suite of interventions capable of significantly improving the future health of the Great Barrier Reef.

### Duties and Key Result Areas:

* + In collaboration with the CSIRO modelling team, couple existing atmospheric and oceanic models.
	+ Design and analyse numerical experiments to investigate the impact of GBR-wide aerosol injections on ocean temperature and coral bleaching.
	+ Design and analyse simulations of reef-scale aerosol injections to support field trials during summer seasons.
	+ Effectively use of High-Performance Computing (HPC) facilities and technologies for model simulations and analysis of the outputs.
	+ Produce high quality scientific papers suitable for publication in high impact journals
	+ Prepare appropriate conference papers and present the results at conferences
	+ Contribute to the development of innovative concepts and ideas for further research
	+ Make a contribution to the effective functioning of the research team and help deliver CSIRO’s organisational objectives and plans
	+ Work collaboratively with colleagues within your team, and across CSIRO and RRAP
	+ Communicate effectively and respectfully with all staff, clients and suppliers in the interests of good business practice, collaboration and enhancement of CSIRO’s reputation
	+ 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.

## **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 numerical modelling in physical oceanography, atmospheric physics or aerosol-cloud interactions.

Please note: To be eligible for this role you must have **less than than 3 years** (or part time equivalent) of postdoctoral research experience.

1. Experience in the development and/or interpretation of numerical models of the atmosphere and / or ocean and the analysis of large and complex model data sets.
2. Experience in working in a Linux/UNIX computing environment and a high level of programming skills in languages such as FORTRAN, C, Python or MATLAB.
3. Demonstrated high level written and oral communication skills with the ability to represent the research team effectively, including the presentation of research outcomes at national and international conferences and to policy and decision makers.
4. Demonstrated ability to write peer-reviewed scientific papers, detailed technical reports and/or competitive grant applications.
5. A record of science innovation and creativity, including the ability & willingness to incorporate novel ideas and approaches into scientific investigations.

## **Desirable:**

1. Experience using supercomputers and clusters.
2. Experience in coupling ocean / atmospheric models.
3. **The ability to work effectively as part of a multi-disciplinary, potentially regionally dispersed research team, plus the motivation and discipline to carry out autonomous research.**

To be appointed as a CERC Postdoctoral Fellow within CSIRO, candidates are required to have **submitted** their PhD at the time of commencement, as a minimum requirement, if PhD conferment has not been obtained. If a candidate has submitted, but their PhD has not yet been formally attained, the starting salary will be CSOF4-1 ($87,068). Upon CSIRO receiving written confirmation that the PhD has been awarded (within a six month period from commencement date), the salary will be increased to the negotiated level and the difference will be back-paid to the Officer’s start date.

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.
* The successful candidate may be required to undertake a pre-employment medical examination prior to commencement.
* 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/)!

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

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