# Research Projects – CSOF4

Role summary for potential applicants

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| Advertised Job Title**:** | Scientific Programmer - Coastal Hazards |
| Reference Number**:** | 60398 |
| Classification**:** | CSOF4 |
| Salary Range: | $82,450 - $93,280 plus up to 15.4% superannuation |
| Location**:** | Aspendale Vic preferred  Hobart, Canberra or Perth may be considered |
| Tenure: | Specified Term of 2 years |
| Relocation assistance**:** | Will be provided to the successful candidate if required. |
| Applications are open to: | * Australian/New Zealand Citizens and Australian Permanent Residents Only |
| Functional Area**:** | Research Projects |
| % Client Focus - Internal: | 70 |
| % Client Focus - External: | 30 |
| Reports to the: | Team Leader – Sea Level, Waves and Coastal Extremes |
| Number of Direct Reports: | 0 |
| Contact for position info. | Dr Mark Hemer, Phn. 03 6232 5017 or email at [Mark.Hemer@csiro.au](mailto:Mark.Hemer@csiro.au) |
| For difficulties applying: | Call 1300 984 220 or email [careers.online@csiro.au](mailto:careers.online@csiro.au). |
| How to apply: | Please apply online at [www.jobs.csiro.au](http://www.jobs.csiro.au) |

**Role Overview:**

The role of Research Projects staff in CSIRO is to collaborate in scientific activities with other research staff usually by assisting with detailed planning, undertaking or assisting with experimental and observational work, and in carrying out the more practical aspects of the work. At senior levels, Research Projects staff may be involved in providing consulting services, science management and/or industry liaison.

The incumbent of this position will work closely with research scientists across a number of projects related to the prediction of coastal processes at weather and climate timescales. The position will be primarily focussed on the development of data analysis tools and the curation of associated code repositories, as well as managing numerical models and data streams on high performance computing (HPC) systems. This work is critical to delivery of key scientific research products for a range of national and international clients, including state and local governments, Australian Defence and intergovernmental organisations.

**Duties and Key Result Areas:**

* Scientific programming and data analysis to support research into coastal weather prediction, climate impact downscaling and related activities.
* Management of weather and ocean numerical model computational jobs and automation across multiple HPC systems, e.g. the National Computational Infrastructure (NCI).
* Development of documentation for software tools and data products.
* Work as part of a multi-disciplinary, regionally dispersed research team, to carry out tasks under limited direction in support of scientific research.
* Develop and maintain effective relationships with project scientists within CSIRO and at collaborating institutions.
* Contribute to publication of findings in journal papers, conference abstracts, consultancy reports, brochures and web-pages
* Communicate effectively and respectfully with all staff, clients and suppliers in the interests of good business practice, collaboration and enhancement of CSIRO’s reputation.
* Work collaboratively with colleagues within the team, the Business Unit and across CSIRO, to reach objectives.
* Allocate activities, direct tasks and manage resources to meet objectives.
* Foster open communication, provide coaching and on-the-job training to both project support and research colleagues, as required, and provide recognition and acknowledgement for staff achievements.
* Adapt and/or develop original experimental methods/equipment/software/concepts/ ideas in support of existing and further research.
* Adhere to the spirit and practice of CSIRO’s Values, Health, Safety and Environment plans and policies, Diversity initiatives and Zero Harm goals.
* Other duties as directed.

**Selection Criteria:**

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

***Pre-Requisites:***

1. **Education/Qualifications:** Relevant Bachelors/Masters Degree in science, preferably with major subjects in physical sciences including Atmospheric Science, Physics, Mathematics or Geography or equivalent experience OR scientific programming, software engineering or computer science.
2. **Behaviours:** A history of professional and respectful behaviours and attitudes in a collaborative environment.
3. **Adaptability:** The ability to effectively manage a number of competing priorities simultaneously, and carry out non-routine tasks under limited direction.
4. **Problem Solving:** Proven ability to investigate underlying issues of complex and ill-defined problems and develop appropriate responses by adapting/creating and testing alternative solutions**.**

***Essential Criteria:***

1. Excellent working knowledge and demonstrated skills in two or more of the following programming languages: C/C++, Java, Matlab, Python, Perl, R and Unix-based shell scripting (Python is preferred)
2. Knowledge of multidimensional file structures such as netCDF, its associated tools and handling of large scientific data sets
3. Working knowledge of version control systems, e.g. Git/Mercurial/Subversion
4. Evidence of written and verbal communication skills including the ability to communicate effectively with colleagues and clients using a variety of communication methods (e.g., brochures, reports, papers, training courses).
5. The ability to work effectively as part of a multi-disciplinary, regionally dispersed research team, and work autonomously in support of scientific research; using well developed time management skills to meet project goals and timelines
6. Demonstrated ability and willingness to contribute novel ideas and approaches in support of scientific investigations.

**Desirable Criteria:**

1. Strong interest in oceanography, meteorology, climate and/or other aspects of the earth sciences. Experience with earth science observations (both in situ and satellite) and/or numerical model output would be an advantage
2. Experience with HPC systems and/or administering and configuring of Linux servers and virtual machines
3. Experience with FORTRAN programming and/or computational fluid dynamic codes
4. Familiarity with GIS software libraries and databases (e.g. GDAL/OGR, Google Earth API, OSM) and/or web-based tools and data visualisation
5. Familiarity with machine learning or related optimisation algorithms

**As Australia’s Innovation Catalyst, CSIRO has strategic actions underpinned by behaviours aligned to**:

* Excellent science
* Inclusion, trust & respect
* Health, safety & environment
* Delivery on commitments.

**In your application and at interview you will need to demonstrate alignment with these behaviours.**

***Other special requirements:***

To be eligible for this position you must be willing and able to undertake travel, both nationally and internationally.

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