# Position Description

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

The following information is for applicants

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| Advertised Job Title**:** | CERC Postdoctoral Fellowship inGenetic Control of Wheat Frost Tolerance |
| Job Reference: | 60772 |
| Relocation Assistance**:** | Will be provided to the successful candidate if required |
| Applications Are Open To: | [ ]  Australian Citizens Only[ ]  Australian/New Zealand Citizens and Australian Permanent Residents Only* [x]  All Candidates
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| Percentage of Client Focus - Internal: | 100% |
| Percentage of Client Focus - External: | 100% |
| Reports to the: | Ben Trevaskis |
| Number of Direct Reports: | 3 |
| Name and Contact Details For Applicant Enquiries: | Rudy Dolferus – rudy.dolferus@csiro.au |
| Contact Details For Applying: | Call 1300 984 220 or email csiro.online@csiro.au  |
| How to Apply: | Please apply online at [jobs.csiro.au](https://jobs.csiro.au/) and enter the requisition number**.** Internal applicants please apply via ‘Jobs Central’ through the ‘People Hub’ icon  |

## Role Overview:

**CSIRO Early Research Career (CERC) Postdoctoral Fellowships** at CSIRO 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.

This CERC Postdoctoral Fellow **will be appointed for two years or part time equivalent.**

The Postdoctoral Fellow will be part of a Grains Research and Development Corporation (GRDC) funded project on improving reproductive stage chilling and frost tolerance in wheat. The project aims to improve reliability of chilling and frost tolerance phenotyping by developing controlled environment phenotyping methods based on metabolomics. The project involves identifying cold-specific diagnostic metabolite markers that differentiate chilling tolerant and sensitive wheat germplasm using metabolomics and lipidomics. These metabolomics markers will then be used to phenotype mapping populations. A SNP linkage map of the mapping population will be established and the phenotyping data will be used to identify chilling tolerance QTL. The QTL positions will be mapped to the wheat genome sequence. Chilling-tolerant and sensitive population tail lines will then be evaluated in field trials.

## Duties and Key Result Areas:

Under the direction of senior research scientists and technical staff, the CERC Postdoctoral Fellow will:

* + Carry out innovative, impactful research of strategic importance to CSIRO that will, where possible, lead to novel and important scientific outcomes.
	+ Utilise design thinking methodology to plan and prepare research proposals, and apply non-academic impact methodology to research projects.
	+ Carry out research investigations requiring originality, creativity and innovation.
	+ Record, manage, and analyse data/information using relevant domain data science techniques.
* Carry out data analysis according to appropriate and rigorous statistical standards.
* 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 plans and policies, Diversity initiatives and Zero Harm goals
* Other duties as directed.

**The CERC Postdoctoral Fellow learning and development program**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

<http://www.csiro.au/en/Careers/Student-and-graduate-programs/Postdoctoral-fellowships>

## CSIRO Competencies:

1. **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.**
2. **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.**
3. **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.**
4. **Judgement and Problem Solving:** Investigates underlying issues of complex and ill-defined problems and develops appropriate response by adapting/creating and testing alternative solutions.
5. **Independence: Recognise and makes immediate changes to improve performance (faster, better, lower cost, more efficiently, better quality, improved client satisfaction).**
6. **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:

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

1. A doctorate (or will shortly satisfy the requirements of a PhD) in a relevant discipline area, such as Physiology and genetics of abiotic stress tolerance in wheat (drought and cold stress).

***Please note:*** *To be eligible for this role you must have* ***no more than 4 years (or part time equivalent)*** *of relevant postdoctoral experience.*

1. Knowledge and experience with wheat reproductive biology, abiotic stress physiology, in particular chilling/frost and drought stress.
2. Knowledge about metabolite analysis and role of metabolites in abiotic stress tolerance (chilling/frost).
3. A solid basis in statistics for data analysis and experience with mapping of QTL.
4. Excellent molecular biology skills and some experience with molecular markers (DNA extraction, PCR, SNP analysis).
5. **High level written and oral communication skills with the ability to represent the research team effectively internally and externally, including through peer reviewed journals and/or authorship of scientific papers, reports, grant applications, patents, and presenting at national and international conferences.**
6. A history of professional and respectful behaviours and attitudes in a collaborative environment.
7. **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.**

## Desirable Criteria:

1. **Experience working with wheat and knowledge about wheat reproductive development, determination of flowering stages and determination of grain yield parameters.**
2. **Experience with wheat genomics and on-line tools of the International Wheat Genome Sequencing Consortium (genome browser, gene annotations, BLAST searches and marker analysis.**
3. **Basic knowledge about transcriptome analysis (RNA-seq).**
4. Remain productive, positive and resilient in complex, ambiguous and/or uncertain environments.

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 ($82,450).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 security/national police/medical/character clearance requirements. Applicants who are not Australian Citizens or Permanent Residents 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! <https://www.csiro.au/en/careers/postdoctoral-fellowships>

## About CSIRO:

At CSIRO we solve the greatest challenges through innovative science and technology. See more [online](http://www.csiro.au/)!

Find out more about CSIRO [Agriculture and Food](https://www.csiro.au/en/Research/AF)