# 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 Frost and Heat in Pulses |
| Job Reference | 90591 |
| Tenure | Specified Term of 3 years full-time |
| Salary Range | AU$92,624 to AU$101,459 pa (pro-rata for part-time) + up to 15.4% superannuation |
| Location(s) | Brisbane, Queensland |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | All candidates |
| Position reports to the | Team Leader |
| Client Focus – Internal | 100% |
| Client Focus – External | 0% |
| Number of Direct Reports | 0 |
| Enquire about this job | Fernanda Dreccer, fernanda.dreccer@csiro.au or Jeremy Whish, jeremy.whish@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. |

**Acknowledgement of Country**

CSIRO acknowledges the Traditional Owners of the land, sea and waters, of the areas that we live and work on across Australia. We acknowledge their continuing connection to their culture and pay our respects to their Elders past and present. View our [vision towards reconciliation](https://www.csiro.au/en/about/Indigenous-engagement/Reconciliation-Action-Plan).

### Role Overview

**CSIRO Early Research Career (CERC) Fellowships** provide opportunities to scientists and engineers who have completed their doctorate and have less than three years relevant research 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.

CERC Fellows **are appointed for three years or full time equivalent.**

This is an exciting opportunity to be part of a multi-organisation, inter-disciplinary team delivering cutting edge research and development in a project supported by a grant from the Grains Research Development Corporation. This role also offers the opportunity to present the findings of the project in appropriate top-tier journals or at conferences.

The project ‘Frost and Heat Management Analytics’ aims to develop and commercialise analytics-based technologies to help growers manage the impacts of frost and heat in wheat, barley, canola, chickpeas, and lentils. It will develop and deliver solutions to map and monitor frost and heat events on-farm and predict the yield losses from those events. The project will enable delivery of those solutions to growers, agronomists, and others in the grains industry through commercial partnerships with multiple AgTech businesses. Those partnerships will enable transformation of the underpinning science into analytics-products that aid key sowing decisions, in-crop management decisions, and underpin the development of new risk management tools.

As a member of this inter-disciplinary team, the CERC Fellow will work with CSIRO scientists, engineers and collaborate with national and international university and business partners across Australia. The work will specifically focus on the yield response of chickpea and lentils to frost and heat events.

The CERC Fellow will focus on chickpeas and lentils to develop novel knowledge of, and quantify the processes leading to, yield loss associated with frost and heat events at different stages of crop development. The task will require expertise in crop/plant physiology and will be carried out using field and controlled environment experiments and crop simulation modelling.

The CERC Fellow will work within a national setting and as part of a diverse multidisciplinary team and present the findings of the project in appropriate top-tier journals or at conferences.

### Duties and Key Result Areas

Under the direction of senior research scientists and engineers, this CERC Fellow will:

* + Review relevant literature and gather data from existing projects to design and carry out field and controlled environment experiments to detect and quantify frost and heat damage in chickpeas and lentils.
	+ Carry out data analysis and implement new knowledge on frost and heat damage in chickpea and lentil in a simulation model and test its predictive capability.
	+ Contribute to design of a framework to survey and predict damage of frost and heat over multiple years and locations.
	+ Provide insight and knowledge to the broader project team in relation to frost and heat damage in pulses.
	+ Publish results in relevant international scientific venues (high-level journals and conferences).
	+ Carry out innovative, impactful research of strategic importance to CSIRO that will, where possible, lead to novel and important scientific outcomes.
	+ Collaborate with members of a diverse project team and external partners to ensure research directions can lead to lasting impact in application domains.
	+ Communicate effectively and respectfully with all staff, clients, and suppliers in the interests of good business practise collaboration and enhancement of CSIRO's reputation.
	+ 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 Fellow learning, development and training programis developed between the CERC Fellow and their CSIRO supervisor. The program will focus on enhancing the Fellow’s 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

## **Selection Criteria**

#### Essential

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

1. A doctorate (or will shortly satisfy the requirements of a PhD). The doctorate must be in a relevant discipline area, such as agricultural science, farming systems or digital agronomy.

Please note: To be eligible for this role you must have **no more than 3 years** (full time equivalent) of relevant research experience.

1. Demonstrated knowledge of plant/crop physiology in relation to abiotic stress in the field.
2. Demonstrated understanding of crops, and familiar with the use of advanced crop modelling (e.g. APSIM, DSSAT, AquaCrop) and proximal sensing monitoring techniques (e.g. CropCircle).
3. Awareness of pulse crops, and the advantages they may bring to agriculture.
4. High-level written and oral communication skills including journal publication and effective presentation of complex research ideas to research scientists and external stakeholders.
5. A record of science innovation and creativity, including the ability and willingness to incorporate novel ideas and approaches into scientific investigations.

## **Desirable**

1. Experience with the analysis of high-dimensional, spatio-temporal data, including development of analytical workflows in R or Python, and source code versioning systems such as Git.
2. Experience running complex, heavily instrumented, field experiments in remote locations.

## **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.

To be appointed to this CERC Fellowship role within CSIRO, candidates are required to have **submitted** their doctoral thesis 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 ($89,680). 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 Clearance or equivalent. Please note that individuals 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 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.

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

## **About CSIRO**

We solve the greatest challenges through innovative science and technology. Visit [CSIRO Online](http://www.csiro.au/) and [Agriculture and Food](https://www.csiro.au/en/Research/AF%22%20%5Co%20%22Agriculture%20%26%20Food-%20CSIRO%20website) for more information.

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

* People First
* Further Together
* Making it Real
* Trusted