# 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 Intelligent Crop Design |
| Job Reference | 85862 |
| Tenure | Specified Term of 3 years Full-time  |
| Salary Range | AU$89,926 to AU$98,504 pa + up to 15.4% superannuation |
| Location(s) | Canberra, ACT |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | All candidates (*must be able to commence by 14 March 2023*) |
| Position reports to the | Group Leader, Cotton Biotechnology |
| Client Focus – Internal | 80% |
| Client Focus – External | 20% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Jessica Hyles via email at jessica.hyles@csiro.au or phone +61 438 622 677 |
| 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 part time equivalent.**

In this project, the CERC fellow will develop cutting-edge technologies, leveraging big datasets and machine learning to design gene editing tools and strategies that will rapidly deliver bespoke crop solutions to grain producers. In collaboration with research partners and industry (International Maize and Wheat Improvement Centre (CIMMYT), CIMMYT Australia ICARDA Germplasm Evaluation (CAIGE) and Rebel Seeds), the CERC fellow will interact directly with beneficiaries of this research. Reinvention of the crop breeding process in this project will impact global food security through delivery of profitable and sustainable crops adapted to future climates.

### Duties and Key Result Areas

The CERC Fellow will work as part of a diverse and multi-disciplinary team to undertake duties including:

* + Integration of large genomic and phenomic datasets using bioinformatics, analytics and/or simulation modelling, to resolve the drivers of crop adaptation
	+ Design gene editing strategies to improve crop performance in target environments
	+ Conduct controlled environment and/or field trials
	+ Generate, manage and analyse large datasets according to FAIR data principles
	+ Build relationships and networks with industry partners, internal/external stakeholders and the broader research community
	+ Communicate research outcomes including publication of research findings
	+ 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
	+ Utilise design thinking methodology to plan and prepare research proposals, and apply non-academic impact methodology to research projects
	+ Proactively undertake development to grow effective researcher capabilities to support career goals.
	+ Adhere to the spirit and practice of CSIRO’s Values, Code of Conduct, Health, Safety and Environment procedures and policy, Diversity initiatives and Zero Harm 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 Agriculture, Plant breeding/genetics, Bioinformatics or Computational Biology.

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

1. Demonstrated skills in the handling and analysis of large genomic and phenotype datasets to resolve the drivers of adaptation.
2. Evidence of programming skills and software design in languages and statistical software packages relevant to biostatistics and bioinformatics (e.g. R, Python, SAS or equivalent).
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 in peer-reviewed scientific journals and at national and international conferences.
4. A record of science innovation and creativity, including the ability & willingness to incorporate novel ideas and approaches into scientific investigations.
5. **The ability to work effectively as part of a diverse, multi-disciplinary and potentially regionally dispersed research team, plus the motivation and discipline to carry out autonomous research.**

## **Desirable**

1. Use of multi-modal data to predict biological performance at landscape scales.
2. Application of machine learning to solve biological challenges.
3. Previous experience in plant breeding and genetics.
4. Knowledge and/or experience in the wheat industry.
5. Willingness to travel domestically and internationally, including for short-term exchange visits to CIMMYT breeding sites in Mexico.

## **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 will be expected to commence employment by 14 March 2023. Candidates are also 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 ($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 Clearance or equivalent. Please note that individuals with criminal records are not automatically deemed ineligible. Each application will be considered on its merits.
* The successful candidate will 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 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