# Postdoctoral Fellowship – CSOF4

Role summary for potential applicants

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| Advertised Job Title**:** | CSIRO Postdoctoral Fellowship in Gene Editing of Wheat grain Quality |
| Reference Number**:** | 58383 |
| Classification**:** | CSOF4 |
| Salary Range: | AU $82K to AU $93K plus up to 15.4% superannuation |
| Location**:** | Black Mountain Science and Innovation Park, ACT |
| Tenure: | Specified Term of 2 years |
| Relocation assistance**:** | Will be provided to the successful candidate if required |
| Applications are open to: | [ ]  Australian Citizens Only[ ]  Australian Citizens and Permanent Residents Only* [x]  All Candidates
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| Functional Area**:** | Research Scientist / Engineer - Postdoc |
| % Client Focus - Internal: | 50% |
| % Client Focus - External: | 50% |
| Reports to the: | Senior Research Scientist |
| Number of Direct Reports: | 1 |

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| **Role Overview:** |
| **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 will help launch their careers, provide experience that will enhance their career prospects, and facilitate the recruitment and development of potential leaders for CSIRO. This position is **for up to 24 months** and will work closely with a leading Research Scientist or Engineer in their respective field. They carry out innovative, impactful research of strategic importance to CSIRO with the possibility of novel and important scientific outcomes. They present the findings in appropriate publications and at conferences.Cereal grains are major sources of dietary fibre, an important contributor to human health. For instance oats are well known to have cholesterol lowering properties due to the high levels of soluble betaglucan in the grain. However wheat has only low levels of betaglucan and it is insoluble. While the popularity of oats is growing it is still a minor cereal when compared to wheat, thus a greater impact on heart health can be achieved through development of wheat with high levels of soluble betaglucan in the grain. Our knowledge of betaglucan biosynthesis has increased dramatically over the last few years through structure function studies of the CslF6 protein and we have used genetic modification to create prototype high solubility betaglucan wheats. We now wish to use gene editing techniques to modify the endogenous wheat CslF6 gene in order to create similar non-GM wheats. The project aims to deliver the first demonstration in wheat endosperm of the use of gene editing to change the functionality of a protein, as well as the promoter of the encoded gene to alter expression in a tissue specific manner. |

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| **Duties and Key Result Areas:** |
| * Under the direction of senior research scientists, carry out innovative, impactful research of strategic importance to CSIRO that will, where possible, lead to novel and important scientific outcomes.
* Producing quality research in the area of wheat grain quality and gene editing.
* Construct gene editing vectors targeting the CslF6 promoter as well as specific amino acid changes in the CslF6 protein.
* Develop wheat plants with altered expression of CslF6 in the grain and analyse grain composition and betaglucan structure.
* Undertake regular reviews of relevant literature and patents.
* Produce high quality scientific and papers suitable for publication in quality journals, for client reports and granting of patents.
* Prepare appropriate conference papers and present those at conferences as agreed with your supervisor.
* 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, the business unit and across CSIRO.
* Communicate effectively and respectfully with all staff, clients and suppliers in the interests of good business practice, collaboration and enhancement of CSIRO’s reputation.
* Adhere to the spirit and practice of CSIRO’s Values, Health, Safety and Environment plans and policies, Diversity initiatives and Zero Harm goals.
* Undertake an appropriate training and development program developed by CSIRO.
* Other duties as directed.

***CSIRO’s postdoctoral training program***is developed between the Postdoctoral Fellow and a CSIRO scientist. 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> |

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| **Selection Criteria:** |
| *Under CSIRO policy only those who meet all essential criteria can be appointed****Pre-Requisites:***1. **Education/Qualifications:** A doctorate (or will shortly satisfy the requirements of a PhD) in a relevant discipline area, such as plant physiology, molecular biology and/or biochemistry.

***Please note:*** *To be eligible for this role you must have* ***no more than 3 years (or part time equivalent)*** *of relevant postdoctoral experience.*1. **Communication: High level written and oral communication skills with the ability to represent the research team effectively internally and externally, including at national and international conferences.**
2. **Publications: A record of publications in quality, peer reviewed journals.**
3. **Behaviours:** A history of professional and respectful behaviours and attitudes in a collaborative environment.

***Essential Criteria:***1. **Strong background in molecular plant biology or equivalent. Strong background in plant metabolism and biochemistry or equivalent.**
2. **Experience with molecular techniques for plant transformation and/or gene discovery.**
3. **The ability to work effectively as part of a multi-disciplinary team plus the motivation and discipline to carry out autonomous research.**
4. **Strong publication record of reports for industry or peer-review journal papers.**
5. **A record of science innovation and creativity, plus the ability & willingness to incorporate novel ideas and approaches into scientific investigations.**

**Desirable Criteria:**1. Expertise in gene editing and plant carbohydrate metabolism.
2. Knowledge in biochemistry and enzymology.
3. Bioinformatic skills to analyse large datasets (i.e. gene expression, plant traits, etc.).

**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.**To be appointed as a 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.**Other special requirements:**Appointment to this role may be subject to conditions including security/medical/character clearance requirements. Applicants who are not Australian Citizens or Permanent Residents may be required to undergo additional security clearance processes; which may include medical examinations and an international standardised test of English language proficiency (i.e. IELTS test).- <http://www.ielts.org/default.aspx> |

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| **Other Information:** |
| **How to Apply**Please apply for this position online at <https://jobs.csiro.au/> and enter requisition number **58383**. Internal applicants please apply via ‘Jobs Central’ in SAP (click ‘Recruitment’) Please load your CV (Maximum 2MB). You may also be required to respond to some screening questions.  If you experience difficulties applying online call 1300 984 220 for assistance. Outside Australian business hours please email: csiro-careers@csiro.au. **Referees**: Please provide contact details of two previous supervisor or academic/professional referees in your resume/CV. We will ask your permission before making contact. **Contact:** If after reading the position details above you require more information please contact:Dr Crispin Howitt via email: Crispin.Howitt@csiro.auPlease do not email your application directly to Dr Crispin Howitt. Applications received via this method will not be considered.**About CSIRO**Australia is founding its future on science and innovation. Its national science agency, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) is a powerhouse of ideas, technologies and skills for building prosperity, growth, health and sustainability. It serves governments, industries, business and communities across the nation. Find out more! [www.csiro.au](http://www.csiro.au). We work flexibly at CSIRO, offering a range of options for how, when and where you work. Talk to us about how this role could be flexible for you. Find out more! [CSIRO Balance](https://www.csiro.au/en/Careers/The-CSIRO-Experience/Balance) **CSIRO Agriculture and Food** is helping Australian farmers and industry improve productivity and sustainability across the agriculture sector. We work directly with farmers and related industries to help us understand the challenges agricultural businesses face, develop a shared vision of how science can make the greatest difference and ultimately deliver practicable solutions.For more information on CSIRO Agriculture and Food, visit <http://www.csiro.au/en/Research/AF>**What CSIRO offers you**This project presents the opportunity to use cutting edge gene editing technologies to enhance the health benefit of wholegrain wheat. The postdoctoral fellow will join a group with world leading expertise in the creation of high fibre cereal grains. They will utilize the extensive expertise of CSIRO’s multidisciplinary research team that undertake research into plant carbohydrate metabolism, biochemistry, genetic engineering, molecular breeding, food technology and nutritional substantiation. Further, as this project has collaborations with the Chinese Academy of Sciences, the postdoctoral fellow will have an opportunity to engage with the leading international plant gene editing research group, create networks and further develop a career path as well as understanding industry perspectives in a global view. The successful candidate will be located in the new state of the art research “Synergy” building at the Black Mountain Science and Innovation Park, which will also host scientists from different research programs, giving plenty of opportunities for productive scientific interactions.CSIRO is Australia prime research organisation, with more than 5000 staff, multiple locations around the country and with research spanning biological, atmospheric, chemical and medical fields. Canberra was chosen “the best place to live in the world” by a survey of the Organisation for Economic Co-operation and Development in 2014. Quality of life is high, there is large multicultural diversity and plenty of amazing outdoors opportunities close by. Childcare facilities are available at CSIRO and flexible work arrangements can be requested. |