# 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 Genome Annotation |
| Job Reference | 93915 |
| Tenure | Specified Term of 3 years Full-time  |
| Salary Range | AU$92,624 to AU$101,459 pa (pro-rata for part-time) plus up to 15.4% superannuation |
|  | Canberra, ACT |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | All candidates |
| Position reports to the | Team Leader: Environmental Systems Biology |
| Client Focus – Internal | 80% |
| Client Focus – External | 20% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Tom via email at Tom.Walsh@csiro.au or Robert via email at Robert.Speight@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).

**Child Safety**

CSIRO is committed to the safety and wellbeing of all children and young people involved in our activities and programs. View our [Child Safe Policy](https://www.csiro.au/en/about/policies/child-safe-policy).

### 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.**

### Duties and Key Result Areas

CSIROs Future Science Platforms (FSPs) represent an investment in science that underpins innovation and can help reinvent and create new industries for Australia. The Advanced Engineering Biology (AEB) FSP was established to investigate the challenges holding engineering biology back from realising its positive impact on the environment, society and industries. It is a collaborative research effort working across multiple Future Science Platforms, Missions, Business Units, universities, and national and international initiatives and is hosted in CSIRO’s Environment business unit.

This project aligns with major themes of the AEB FSP: **Innovative Bioproduction Platforms and Data-Driven Molecular Design:** focused on the development of digital workflows and tools that greatly reduce the time and resource requirements for the development of new biotechnological solutions. Genomics is a commonly used tool in this development cycle and requires new innovative workflows and analytical tools. These workflows will dramatically increase our ability to focus future research on the most promising genes and pathways.

This project aims to incorporate the latest developments in data generation and machine learning models with gene discovery and annotation to deliver methods and tools that create biologically accurate gene and protein predictions in non-model species. The project will also leverage long-read sequencing, direct RNA sequencing and spatial transcriptomics approaches to develop these solutions, capturing evidence-based genic diversity in isoforms in multiple individuals from the same species (pangenomes). Finally, the project will collaborate with current AEB efforts in protein function prediction to validate gene annotation outputs and further improve domain based functional annotations and pathway prediction.

With support and mentoring from senior research scientists and engineers, this CERC Fellow will:

* + Build methods to streamline and integrate analysis pipelines alongside ongoing CSIRO wide genome assembly efforts, to build higher quality evidence informed annotation that is less reliant on homology.
	+ Incorporate validated and predicted function into the annotation pipelines to develop functional annotation as a new standard for genome annotation.
	+ Investigate the potential for long read/spatial transcriptomics, high throughput proteomics and epigenetics to develop a functional and regulatory approach to annotation incorporating splicing and regulation.
	+ Collaborate closely with the Applied Genomics Initiative in CSIRO, one of the Asia Pacific’s largest genomics efforts and collaborators to deliver innovative approaches to annotation from numerous datasets.
	+ 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.
	+ Carry out research investigations requiring originality, creativity and innovation.
	+ Record, manage, and analyse data/information using relevant domain data science techniques.
	+ 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 and diversity initiatives.
	+ 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 may be in any relevant discipline area, but the candidate must have strong evidence of their expertise in genomics and bioinformatics.

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

1. Demonstrated expertise in functional genomics and developing annotation.
2. Demonstrated excellence at developing bioinformatic pipelines, and streamlining them for broad application.
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 at national and international conferences.
4. A sound history of publication in peer reviewed journals and/or authorship of scientific papers, reports, grant applications or patents.
5. A record of science innovation and creativity, including the ability & willingness to incorporate novel ideas and approaches into scientific investigations.

## **Desirable**

1. Experience with algorithm development or optimisation, preferably with a focus on gene annotation and functional prediction.
2. Experience with long read technologies.
3. Experience with splicing or epigenetics or other regulatory mechanisms.
4. Experience in developing or applying ML/AI methodology in bioinformatics or a related field.
5. Experience in working with diffuse teams.
6. Remain productive, positive and resilient in complex, ambiguous and/or uncertain environments.
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.

## **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 as a CERC Fellow 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 is subject to provision of a pre-employment background check and may be subject to other security/medical/character clearance requirements.

* The successful candidate will undertake a pre-employment background check. 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 [Advanced Engineering Biology Future Science Platform](https://research.csiro.au/aeb/) 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