# 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 Pathogen Genomics and Bioinformatics |
| Job Reference | 79694 |
| 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) | Geelong, VIC |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | Australian/New Zealand Citizens, Australian Permanent Residents and Australian temporary residents currently residing in Australia (visa sponsorship may be provided to eligible onshore candidates) |
| Position reports to the | Team Leader |
| Client Focus – Internal | 90% |
| Client Focus – External | 10% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Matthew Neave via email at Matthew.Neave@csiro.au or phone +61 3 5227 5542 |
| 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](mailto: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 area 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 full-time or equivalent.**

The Postdoctoral Fellow will be based at the Australian Centre for Disease Preparedness (ACDP) in Geelong. The project will use advanced bioinformatics techniques to accelerate the role of high throughput sequencing (HTS) in the diagnosis and understanding of viral and bacterial diseases. As HTS becomes ever more accessible and cost-effective, diagnostic tests are moving toward a ‘big-data’ future with an increasing requirement for bioinformatics capability.

In recognition of these changes, the Fellow will develop sophisticated and reproducible computational workflows for pathogens of significant biosecurity concern to Australia and help move HTS to the forefront of diagnostic investigations. The Fellow will develop pipelines for pathogen discovery from untargeted metagenomic sequencing, viral genome assembly from historical reference collections, and phylogenetic and phylogenomic workflows for rapid data sharing. The outputs will enable the Fellow to characterise newly sequenced genomes and undertake evolutionary analyses, working together with multidisciplinary teams focused on the detection and characterisation of animal and zoonotic pathogens to support diagnostics and surveillance.

### Duties and Key Result Areas:

Under the direction of the Leader of the Agent Characterisation team and relevant project leaders:

* Carry out innovative, impactful research of strategic importance to CSIRO that will lead to novel workflows and bioinformatics outputs for HTS diagnostics and research.
* Conduct research investigations requiring originality, creativity and innovation, specifically to develop robust and rapid HTS workflows and pathogen genome analyses for a range of different diagnostic and research objectives.
* Plan and design relevant studies to ensure reliability and accuracy of bioinformatics pipelines and analyses, including compiling and submitting documentation for institutional and regulatory approval.
* Record, manage, and analyse data/information using relevant domain data science techniques.
* Undertake regular reviews of relevant literature and apply these findings to the research project objectives.
* Produce high quality scientific papers suitable for publication in quality journals and for client reports in collaboration with relevant project leaders or domain experts at ACDP.
* Prepare appropriate conference papers and present as required.
* 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.
* Proactively undertake development to grow effective researcher capabilities to support career goals.
* 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.

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

## **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.

## **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) in a relevant discipline area, such as bioinformatics, computational biology, or molecular virology/biology with a focus on analysis.

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

1. Practical experience with HTS analysis and bioinformatics techniques, such as genome assembly, metagenomics, transcriptomics, phylogenetics, evolutionary or microbiome analysis.
2. Evidence of advanced data analytics and programming capabilities in at least one language relevant for bioinformatics (e.g., Python, R, BASH).
3. **The ability to work effectively as part of a multi-disciplinary research team, plus the motivation and discipline to carry out autonomous research.**
4. Excellent interpersonal and written and verbal communication skills, including the ability to document methods and results and communicate effectively with colleagues and clients in order to meet project goals and timelines.

## **Desirable:**

1. Proven experience developing workflow solutions on high-performance compute (HPC) servers using Snakemake, Nextflow, BASH or similar.
2. Experience in running HTS machines, such as the Oxford Nanopore MinION.
3. Knowledge of pathogen genomics and phylogenetics (viral or bacterial).
4. A record of science innovation and creativity, including the ability & willingness to incorporate novel ideas and approaches into scientific investigations.

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 (AU $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 Check or equivalent. Please note that people with criminal records are not automatically deemed ineligible. Each application will be considered on its merits.
* The successful candidate will be required to obtain and maintain a National Health Security (NHS) security clearance.
* 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/

Security Assessment and Microbiological Security Requirements for Personnel Working on the ACDP Site

The nature of our work requires that each person working on site must comply with the conditions described below.

* The appointee is required to pass a security clearance at a level appropriate to duties of the position. Confirmation of the appointment is subject to obtaining that clearance.
* It is essential that all work on exotic or emerging diseases carried out at ACDP is conducted in a safe manner to prevent the escape of the disease agents used, and to this end, all activities and personnel will be subject to appropriate microbiological security measures. Consequently, while working at ACDP, you may not reside on a property on which are kept any of the following animals: sheep, cattle, pigs, goats, horses, asses and mules, any other cloven-hoofed animal, fowls, turkeys, geese, domestic ducks, caged birds, emus or ostriches. Personnel working with diseases of aquatic animals additionally may not keep aquarium fish at their place of residence and personnel working with cane toad material must also avoid contact with amphibians.
* In addition, for a period of seven days after working in the microbiologically secure area of ACDP, personnel may not have close contact with any of the above animals, amphibians or birds or the actual places where these animals are held or visit any aquatic animal farm or aquatic animal hatchery.
* Working in the barrier maintained Small Animal Facility requires avoidance of contact with additional animals such as mice, rats, guinea pigs, rabbits and poultry 3 days prior to arrival.
* Personnel must abide by Occupational Health, Safety and Environment regulations. Safety signs and directives issued by CSIRO personnel must always be complied with.

**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. To find out more visit us [online](http://www.csiro.au/)!

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

* 1. People First
  2. Further Together
  3. Making it Real
  4. Trusted

Find out more about the CSIRO [Australian Centre for Disease Preparedness](https://www.csiro.au/en/Research/Facilities/AAHL)