# 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 Virus Vaccine Development |
| Job Reference | 88367 |
| Tenure | Specified Term of 3 years  Full-time |
| Salary Range | AU$89,926 to AU$98,504 plus 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 Citizens Only |
| Position reports to the | Team Leader, Mammalian Infectious Disease Research, Australian Animal Health Laboratory |
| Client Focus – Internal | 70% |
| Client Focus – External | 30% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact David Williams via email at [d.williams@csiro.au](mailto:d.williams@csiro.au) or phone +61 3 5227 5364 |
| 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 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 full-time or equivalent.**

The CERC Postdoctoral Fellow will be part of the Immune Resilience-Future Science Platform (FSP). CSIRO FSPs address new scientific challenges for Australia investing in science that underpins innovation that has the potential to help reinvent and create new industries. FSPs allow the development of capability and capacity for a new generation of researchers to work with CSIRO on future science. The Immune Resilience FSP aims to harness the fundamental understanding of the immune system to develop novel strategies and platforms that will build resilience in animals to combat disease and parasite challenges.

We seek to appoint a CERC Fellow to undertake cutting-edge vaccine development for African swine fever (ASF), a devastating disease of pigs that is currently causing a global pandemic and threatens Australia’s biosecurity.

This project will aim to address the inherent safety issues of Live Attenuated Vaccines (LAVs) through the development of a replication incompetent live virus or disabled infectious single cycle (DISC) vaccine, together with a complementary cell substrate for safe, scalable and cost-effective vaccine manufacturing. This novel approach will form the basis for new vaccine capability that can be applied to other challenging vaccine targets for human and animal health. DISC vaccines combine the advantages of modified live viruses (MLV) for stimulating host immunity with the safety profile of inactivated or subunit vaccines. Development of complementary cell lines expressing the essential viral gene(s) knocked out of the DISC virus genome provides a defined continuous cell substrate for manufacture.

The CERC Fellow will join our multidisciplinary ASF research project team, working across science programs and as part of the World Organisation for Animal Health ASF Reference Laboratory at ACDP. The research will build on our previous work to identify key host pathways involved in virus infection, and our work to develop a precision gene-edited cell lines to support for application to vaccines and diagnostics.

### Duties and Key Result Areas

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

* + Undertake research in vaccinology, virology and cell line engineering including (but not limited to):
    - the design of innovative methodologies for generating ASF viral deletion mutants, using relevant genome engineering tools and techniques
    - engineer helper cell lines, which constitutively express the deleted viral gene(s) *in trans* to facilitate virus rescue, using CRISPR/Cas9 methodologies
    - establish and characterise prototype master seed stocks and confirm replication incompetence by infection studies using permissive non-helper cell lines.
    - provided in vitro testing demonstrates defective replication, assess the safety and immunogenicity of the DISC candidate *in vivo* in a small-scale pig trial.
    - develop a novel and complementary antibody test to detect the major viral structural protein (p72), as well as antibodies to a novel peptide encoded by the DISC virus for differentiating infected and vaccinated animals.
    - Work closely with other post-doctoral fellows in the Immune Resilience FSP vaccine stream to deliver aligned objectives
  + Work in a diverse and multi-disciplinary team with a high-level collegiate and respectful approach to help deliver combined and independent outcomes.
  + 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.
  + Maintain research excellence through the production of high-quality scientific papers and presentations at national and international conferences.
  + Adhere to the spirit and practice of CSIRO’s 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 virology, molecular biology, vaccine development, or similar.

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

1. Experience in employing molecular virology or molecular microbiology techniques
2. Experience in the application of CRISPR-based techniques for targeted gene knock out
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. Remain productive, positive and resilient in complex, ambiguous and/or uncertain environments.
2. **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 (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.

**Security Assessment and Microbiological Security Requirements for Personnel Working on the Australian Centre for Disease Preparedness (ACDP) Site**

**To be eligible for this position you must be willing and able to:**

* Certain positions including those working in the ACDP microbiological secure area will require 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, mules and camelids, any other cloven-hoofed animal, fowls, turkeys, geese, domestic ducks, caged birds, emus or ostriches. Personnel working with diseases of aquatic animals may not keep aquarium fish at their place of residence and at times specific species may be excluded depending on the nature of the work conducted.
* 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 or the Werribee Animal Health Farm requires avoidance of additional animals such as mice, rats, guinea pigs, rabbits, ferrets and poultry of a minimum of 3 days prior to arrival.
* Certain positions will require medical assessment and vaccinations against various agents which may include (where applicable) influenza, Hepatitis b, Rabies, Japanese encephalitis, Q Fever and SARS-CoV-2 or other agents if working with certain viruses. The successful candidate will be required to provide satisfactory evidence of vaccination against certain viruses / diseases prior to commencement and/or may be expected to be vaccinated against other viruses/diseases during the course of their employment.
* Positions working at PC4 will also require a pre-employment psychological assessment.
* Given ACDP’s role in the International Regional Program, there may be a requirement for some personnel to travel internationally and if required for this work, suitable staff should be able to obtain a valid passport and obtain applicable vaccinations.
* In the event of an emergency disease response, ACDP may be required to implement the Emergency Animal Disease Response Plan and personnel may be directed to work in areas other than their usual assignment in order to meet the needs of the response. This direction may include work outside usual working hours, and may require working onsite.
* Personnel must abide by Occupational Health, Safety and Environment regulations. Safety signs and directives issued by CSIRO personnel must be complied with at all times.
* Access restrictions apply to the Werribee Animal Health Facility (WAHF) site that is associated with, but remote from, the ACDP site.

**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 [Australian Centre for Disease Preparedness](https://www.csiro.au/en/about/people/business-units/ACDP) 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