# Position Details

## CSIRO Early Research Career (CERC) Postdoctoral Fellowship– CSOF4

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| The following information is for applicants | |
| Advertised Job Title | CERC Postdoctoral Fellowship in pathogen profiling of mice |
| Job Reference | 80892 |
| Tenure | Specified Term of 3 years  Full-time |
| Salary Range | AU$89,926 to AU$98,504 pa (pro-rata for part-time) + up to 15.4% superannuation |
| Location(s) | CSIRO Black Mountain Science and Innovation Park, Canberra, ACT |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | Australian/New Zealand Citizens and Australian Permanent Residents Only |
| Position reports to the | Team Leader, Rodent Management Team |
| Client Focus – Internal | 0% |
| Client Focus – External | 100% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Peter Brown via email at peter.brown@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](mailto:careers.online@csiro.au) or call 1300 984 220. |

### 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.**

The Rodent Management Team is leading Australia’s efforts in understanding and developing management strategies for tacking mouse plagues. Effort focusses on monitoring and forecasting mouse populations, improving control strategies, and understanding mouse ecology and behaviour in no-till farming systems. Mouse forecast models are very good at predicting increases in mouse abundance, but very poor in predicting when a population “crash” will occur. We know that disease plays an important role in this “crash”, but neither the pathogens involved nor the epidemiological dynamics of disease progression through populations are currently understood.

A new area of work that emerged during the mouse plague that affected much of NSW in 2021 is the role and impact of diseases in mouse populations. In particular:

1. To what extent do pathogens contribute to mouse population crashes/regulation?
2. What is the potential zoonotic disease risk of mouse-vectored pathogens to humans?
3. What is the disease risk to livestock that consume mouse-infested hay and fodder?
4. Can this information improve our ability to forecast the start and end of a mouse plague and improve management strategies?

Given recent advances in disease profiling using mRNA sequencing (metatranscriptomics), there is strong interest from industry and government to screen mouse populations for a range of diseases and parasites to better understand the role of disease in influencing population dynamics, the disease risk posed to humans and livestock, and to inform development of potential options for improved control.

### Duties and Key Result Areas:

* Design and carry out disease profiling (metatranscriptomics) studies (wetlab and drylab) to better understand how diseases influence the population dynamics of mice, the potential zoonotic disease risk to humans, disease risk to livestock, and provide information to improve forecasting models of mice in Australian cropping systems.
* Assist with the experimental design and sample collection. Assist with collection of samples from the field and assist with communication of findings to end-users and stakeholders (growers and the grains industry).
* Liaise with clients to determine their needs and take personal responsibility for client satisfaction.
* Under limited direction, assist in the planning and preparation of research proposals and carry out research investigations, requiring originality, creativity and innovation.
* Present results in a meaningful format, prepare reports for clients and/or write scientific papers for publication.
* Address problems promptly and in a constructive manner, selecting the most profitable lines of attack upon a problem, preparing detailed design proposals and experimental protocols.
* Undertake experimental and/or observational research activities, often requiring the supervision and/or training of others to ensure experiments are established in accordance with research design, or as required.
* Draw on professional expertise, knowledge of other disciplines and research experience, recognise opportunities for innovation and generate new theoretical perspectives by pursuing new ideas/approaches and networking with scientific colleagues across a range of disciplines.
* Communicate openly, effectively and respectfully with all staff, clients and suppliers in the interests of good business practice, collaboration and enhancement of CSIRO’s reputation.
* Work collaboratively as part of a multi-disciplinary, often regionally dispersed research team, and business unit to carry out tasks in support of CSIRO’s scientific objectives.
* Adhere to the spirit and practice of CSIRO’s Code of Conduct, Health, Safety and Environment plans and policies, Diversity initiatives and Zero Harm goals.
* Other duties as directed.

[**The CERC Postdoctoral Fellow learning and development program**](http://www.csiro.au/en/Careers/Student-and-graduate-programs/Postdoctoral-fellowships)is 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). The doctorate must be in a relevant discipline area, such as veterinary microbiology or pathogen genomics.

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

1. A current Australian manual driver’s licence or the ability and eligibility to obtain an Australian manual drivers licence.
2. Demonstrated wet-lab expertise, such as experience with nucleic acid extraction, PCR, sequencing library preparation, Illumina and/or Nanopore sequencing.
3. Demonstrated bioinformatics experience in analysis of large datasets (with an emphasis on pathogen discovery) and phylogenetics.
4. 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.
5. A sound history of publication in peer reviewed journals and/or authorship of scientific papers, reports, grant applications or patents.
6. Demonstrated ability to work as part of an interdisciplinary team, and carry out independent research to achieve project goals.
7. A record of science innovation and creativity, including the ability and willingness to incorporate novel ideas and approaches into scientific investigations.

## **Desirable:**

1. Experience with, or a willingness to participate in, field work with mice (or other small wildlife species) for sample collection including conducting post-mortems.
2. Knowledge and thorough understanding of core principles of biosecurity and/or Australian crop production systems.
3. Thorough understanding of population-level infectious disease epidemiology, including epidemiological modelling.
4. Experience setting up and working with Microsoft Access databases or SQL.
5. Remain productive, positive and resilient in complex, ambiguous and/or uncertain environments.

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 ($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.
* From 17 January 2022 CSIRO staff members and Other Personnel are required to be fully vaccinated with a COVID-19 Vaccine as a condition of entry to an CSIRO occupied site.  The successful candidate will be required to provide relevant Vaccination Information to the line manager.

**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 CSIRO [Health and Biosecurity](https://www.csiro.au/en/Research/BF)