# 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 Multi-omics for Assembly and Functionality of Insect Gut Microbiomes |
| Job Reference | 76727 |
| 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) | Flexible: Canberra or Brisbane |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | All Candidates |
| Position reports to the | Research Science Supervisor / Microbiomes for One Systems Health – Future Science Platform |
| Client Focus – Internal | 90% |
| Client Focus – External | 10% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Matthew Morgan via email at Matthew.Morgan@csiro.au or phone +61 2 6246 4172 |
| 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) Postdoctoral Fellowships** provide opportunities to scientists and engineers who have completed their doctorate and have less than three years relevant postdoctoral work 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 Postdoctoral Fellows **are appointed for three years or part time equivalent.**

The position will be part of the **Microbiomes for One Systems Health - Future Science Platform (FSP).** CSIRO FSPs address new scientific challenges for Australia. They are an investment 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 Microbiome FSP is developing new understanding of microbiome connectivity across the environment to human continuum and how system perturbations impact on microbiome functionality, diversity and systems health. A key objective is to capture greater benefit from microbiome interactions through more informative and predictive frameworks for functionality and by targeted interventions. Capacity to directly manipulate microbiomes across hosts and environments will provide new opportunities for bio-based solutions to be developed and applied to improve host and environmental health and for increased benefit to plants, animals and humans.

The portfolio of research within the Microbiome FSP is focussed around new science that address; systems connectivity, predictive frameworks and deliberate Interventions through the application of multi-omic tools to analyse point and system level change and associated measures of functionality both within and across interconnected biomes. This includes integration and analysis of multi-layered data and use of empirical and/or statistical modelling. The science portfolio of the FSP spans multiple CSIRO Business Units that address key focal areas that include; i) Environment, Soil & Plant Health, ii) Food Chain & Production ii) Diet, Gut and Health and iv) Optimized Industry & Urban Processes.

Further information: <https://research.csiro.au/microbiome/>

### Duties and Key Result Areas:

Insects play vital roles in ecological systems as environmental engineers and are increasingly important in industrial applications such as waste biotransformation. Gut microbiomes significantly impact the metabolic outputs, health and phenotypes of their insect hosts. Understanding microbiome acquisition and functionality is a crucial step towards designing deliberate interventions that will improve ecological and industrial outcomes. The PDF will exploit the experimental manipulability of insects and use integrated multi-omics to provide a clear view of the molecular mechanisms and functions that confer selective benefits to insect hosts as targets for maintenance or manipulation. The successful candidate will have access to managed colonies of a range of insect species of industrial, commercial, and ecological importance, including black soldier fly and dung beetles. This position will develop a generalisable framework for predictive functionality and designed interventions in one or more species that can be applied more broadly across other species to produce beneficial outcomes for Australia.

Under the direction of senior research scientists, the CERC Postdoctoral Fellow will:

* + - * Design and lead the experimental program, generate relevant multi-omics data and perform bioinformatics analyses to uncover insect microbiome assembly and functionality.
      * Define cross-system connectivity through exploring exchange of microbiome components between host and their environment.
      * Identify molecular mechanisms and functions that confer selective benefits to insect hosts as targets for maintenance or manipulation.
      * Establish key insects as model systems for functional prediction and deliberate intervention
  + Carry out innovative, impactful research of strategic importance to CSIRO that will, where possible, lead to novel and important scientific outcomes.
  + Utilise design thinking methodology to plan and prepare research proposals, and apply impact methodology to research projects
  + Proactively undertake development to grow effective researcher capabilities to support career goals.
  + Adhere to the spirit and practice of CSIRO’s Code of Conduct, Health, Safety and Environment procedures and policy, Diversity initiatives and Making Safety Personal 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 Postdoctoral Fellow and their CSIRO supervisor. 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

## **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 Functional Genomics, Metagenomics, Systems Biology, or a related field.

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

1. Demonstrated experience in host or microbial multi-omics data generation, particularly (meta)transcriptomics, proteomics and metabolomics.
2. Demonstrated ability to develop experimental plans, originality in solving problems and pursue innovative research approaches, including the ability & willingness to incorporate novel ideas and approaches into scientific investigations.
3. Demonstrated proficiency in bioinformatics, including in one or more scripting or programming languages.
4. Demonstrated ability to meet performance deadlines under minimal supervision, and to work **effectively as part of a multi-disciplinary, regionally dispersed research team** to achieve shared goals through cooperation.
5. 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.
6. A sound history of publication in peer reviewed journals and/or authorship of scientific papers, reports, grant applications or patents.

## **Desirable:**

1. Demonstrated experience in multi-omics data integration.
2. Remain productive, positive and resilient in complex, ambiguous and/or uncertain environments.

To be appointed to this CERC Postdoctoral Fellowship role within CSIRO, candidates will be expected to commence employment June 2022. To be appointed as a CERC 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 (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 may 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 may be required to undertake a pre-employment medical examination prior to commencement.
* 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 Postdoc 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.

CSIRO Early Research Career (CERC) Postdoctoral Fellow Experience Employee Value Proposition (EVP). Find out more [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 [Agriculture and Food](https://www.csiro.au/en/Research/AF)

Find out more about CSIRO [Health and Biosecurity](https://www.csiro.au/en/Research/BF)

Find out more about CSIRO [Land and Water](https://www.csiro.au/en/Research/LWF)