# 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 Soil Biogeochemistry and Ecology |
| Job Reference | 81424 |
| 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) | Adelaide, SA |
| 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, Carbon Accounting & Function, Sustainability Program, Agriculture & Food |
| Client Focus – Internal | 100% |
| Client Focus – External | 0% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Lynne Macdonald via email at lynne.macdonald@csiro.au or phone +61 08 8273 8111 |
| 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) 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.
* 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 full-time or equivalent.**

This **CSIRO Early Research Career (CERC) Postdoctoral Fellow** will develop new tools for soil health that act as early indicators of change to soil carbon and nitrogen cycling processes that are central to sustainable management. The position will play a pivotal role in **CSIRO’s Valuing Sustainability Future Science Platform** ([VS-FSP](https://research.csiro.au/vsfsp/)) aiming to develop science solutions to build confidence that actions lead to positive outcomes for land, water, biodiversity, and people. The VS-FSP is a substantial initiative that will recruit and embed 15 post-doctoral fellows into diverse inter-disciplinary research teams that bring together biophysical, ecological, and social science expertise. The research teams will co-develop and test measures of sustainability which reflect stakeholder values, achieve real outcomes, and can guide investment and innovation for ongoing improvement.

This position is one of three integrated CERC Fellowships within the VS-FSP **Functional Ecosystems for Nature + Prosperity** project. It offers an exciting opportunity to join an inter-disciplinary team aiming to develop new leading indicators of ecosystem health and integrity and embed these indicators into decision processes to accelerate practice change for nature-positive outcomes across agri-food and nature-based ecosystems. The research will build tools and knowledge-to-action frameworks based on a deep understanding of ecosystem function to support the effective identification, prioritisation, and action planning needed to protect and restore ecosystems at risk of irreversible decline.

**The Postdoctoral Fellow** will be to drive the soil biogeochemistry component of the project to develop novel and trusted tools that act as early indicators of change to soil processes that are central to sustainable soil management. These tools will integrate knowledge of microbially driven biogeochemical cycles, and their impact on regulating the flow and fate of carbon and nutrients within agricultural and natural ecosystems. Collaborating across the broader team, the Fellow will seek to understand how well current soil health and nutrient budget indicators serve to inform stakeholder decision making. With growing market drivers in soil carbon and biological health, this research will explore whether microbial indicators of soil biogeochemical processes can be used to influence management decisions, mitigate sustainability risks, and enhance positive outcomes that align with community values.

The Functional Ecosystems project team will bring together skills in biophysical, ecological, and data sciences with social and economic sciences to work with a diverse range of stakeholder groups and regional communities. As a key member of the team, The Postdoctoral Fellow will lead the soil biogeochemistry research and collaborate with other CERC Fellows in quantitative natural systems ecology and social-ecological systems. The CERC Fellows will be expected to engage with stakeholders to build participatory approaches. Inter-disciplinary activities will collectively address challenges in the design and uptake of monitoring and reporting tools to ensure that co-produced leading indicators of ecosystem function are relevant, accessible, reliable, and trusted by a broad range of stakeholders and embedded in social processes. The project aims to develop research outcomes that underpin sustainable innovation and prosperity for Australia’s future.

[**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/s. 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

### Duties and Key Result Areas:

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

* + Carry out innovative, impactful research of strategic importance to CSIRO that will, where possible, lead to novel and important scientific outcomes.
  + Recognise and utilise 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.
  + Produce high quality scientific papers suitable for publication in peer reviewed journals, and internal and external reports. Prepare appropriate conference papers and present those at national and international conferences as agreed with their supervisor.
  + Record, manage, and analyse data/information using relevant domain data science techniques.
  + Proactively undertake development to grow effective researcher capabilities to support career goals.
  + Work collaboratively with colleagues within the team, Business Unit and across CSIRO.
  + Adhere to the spirit and practice of CSIRO’s Code of Conduct, including ethical human research and privacy requirements, Health, Safety and Environment procedures and policy, Diversity initiatives and Making Safety Personal goals.

1. Other duties as directed.

## **Required Competencies:**

* **Teamwork and Collaboration:** Cooperates with others to achieve organisational objectives and may share team resources 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**

To allow assessment of your application, please address each selection criteria with a short paragraph demonstrating the relevance of your research experiences and achievements.

**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 soil biogeochemistry, microbial ecology, ecological sciences, or similar.

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

1. Demonstrated experience in applying ecological theory and soil biogeochemistry to quantitatively account for carbon and nutrient flows through agricultural and/or natural ecosystems.
2. Proficiency in data manipulation and statistical analysis, including multivariate analysis, bioinformatics and/or machine learning, using programming languages such as R, Python, C or similar.
3. Interest in undertaking inter-disciplinary research linking ecological and biophysical sciences with social systems to ensure that science is effectively used to achieve real-world impact.
4. High level written and oral communication skills including first author publication in peer reviewed journals, presentation of research outcomes at national and international conferences, and ability to effectively communicate with researchers and external stakeholders.
5. A record of science innovation and creativity, including the ability and willingness to incorporate novel ideas and ecological theory into scientific investigations.
6. The ability to work effectively as part of an interdisciplinary, potentially regionally dispersed, research team, plus the motivation and discipline to carry out autonomous research.
7. A current driver's license.

**Desirable:**

1. Experience with regional or remotes field work and safety requirements, and the willingness to travel.
2. Experience in designing and implementing spatially complex landscape experiments, using spatial information systems, and/or spatial modelling of soil biogeochemical processes.
3. Knowledge and/or experience in participatory research and co-production methods, values framing and elicitation, and stakeholder engagement.
4. The ability to remain productive, positive, and resilient in complex, ambiguous and/or uncertain environments.

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 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.
* 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 & Food