# 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 Proximal Sensing for Natural Capital |
| Job Reference | 71181 |
| Tenure | Specified Term of 3 years (or part-time equivalent) |
| Salary Range | AU$86,434 to AU$94,679 pa (pro-rata for part-time) + up to 15.4% superannuation |
| Location(s) | Canberra (Black Mountain site), ACT, Australia |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | * Australian/New Zealand Citizens and Australian Permanent Residents * Australian temporary residents currently residing in Australia (visa sponsorship may be provided to eligible candidates) |
| Position reports to the | Team Leader, Proximal Sensing |
| Client Focus – Internal | 70% |
| Client Focus – External | 30% |
| Number of Direct Reports | 0 |
| Enquire about this job | Uta Stockmann via email at uta.stockmann@csiro.au or phone +61 2 6218 3464 |
| 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 of 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 of 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** and will work closely with leading Research Scientists or Engineers in their respective fields.

This Postdoctoral fellowship will develop novel soil proximal sensing tools to inform natural capital accounting frameworks. The fellow will be a broad systems thinker and have a strong interest in using spatial approaches to solve challenges in measuring and valuing Australia’s soil resources. Digital mapping tools will be used to model relationships between soil condition, function, and agricultural productivity. Joining the Soil & Landscapes Group Canberra, the fellow will have access to field deployable proximal tools (e.g. vis-NIR, pXRF), high-performance computing, and a tailored career development program. Collaborating across a multi-disciplinary research team, including experts in natural capital accounting and life cycle assessment, and engaging with the agricultural sector, the fellows research will drive a step-change in the way soil information is used to inform the sustainable management of Australia’s soil resources.

### Duties and Key Result Areas

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

* + Carry out research investigations requiring originality, creativity and innovation.
  + Work effectively as part of a multi-disciplinary, often regionally dispersed research team, to undertake independent scientific investigations and carry out associated tasks under broad guidance from other Research Scientists.
  + Conceptualise and test a novel framework to integrate soil spatial information into tools and metrics to support natural capital accounting, taking account of current international literature and expert opinion.
  + Develop and validate rapid and cost-effective proximal tools to support the integration of Australia’s soil resources into natural capital accounting, identifying and prioritising key parameters that support functional understanding of the agro-ecosystem.
  + Carry out innovative, impactful research of strategic importance to CSIRO that will, where possible, lead to novel and important scientific outcomes.
  + Consult with key stakeholders to develop and refine ideas where appropriate.
  + 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.
  + Proactively undertake development to grow effective researcher capabilities to support career goals.
  + Communicate effectively and respectfully with all staff, clients and suppliers in the interests of good business practice, collaboration and enhancement of CSIRO’s reputation.
  + Adhere to the spirit and practice of CSIRO’s Values, 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**

**Please address the Selection Criteria in writing and append to the end of your Cover Letter.**

#### 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 Pedometrics, soil function assessment, soil spatial and temporal analysis, or ago-ecosystems modelling.

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 knowledge and skills in designing and implementing field-based research aimed at quantifying or modelling the state and function of soils across spatially variable landscapes.
2. Demonstrated hands-on experience in predicting soil properties using remote or proximal tools, and the laboratory and data requirements for calibration and validation.
3. Applied experience in spatial modelling, and/or machine learning, and relevant coding languages (e.g. R, Python), including a sound understanding of FAIR data principles, data management and version control, and multivariate statistics.
4. A record of science innovation and creativity, including an ability to collaborate and troubleshoot scientific problems to bring novel ideas to research fruition.
5. High level written and oral communication skills including journal publication and effective presentation of complex research ideas to research scientists and external stakeholders.
6. **The ability to work effectively as part of a multi-disciplinary or regionally dispersed research team, and the motivation to drive autonomous research components.**
7. A current Australian driver’s licence or the ability to obtain one.

## **Desirable**

1. A sound understanding of Australian and/or international agro-ecosystem function.
2. An understanding of natural capital accounting frameworks, life cycle assessment methodologies, and challenges in their application to agro-ecosystems.
3. Knowledge of, or experience in, soil-plant simulation modelling such as APSIM and data requirements for soil parameterisation.

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 ($83,687). 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 and Food](https://www.csiro.au/en/Research/AF)