# 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 Digital Soil Health Benchmarking |
| Job Reference | 100852 |
| Tenure and Work Schedule | Specified Term of 3 years  Full-time |
| Salary Range | AU$99,990 - AU$109,527 pa (pro-rata for part-time) plus 15.4% superannuation |
| Location(s) and Office Arrangements | Black Mountain (Canberra), ACT  St Lucia (Brisbane), QLD |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | All Candidates |
| Position reports to the | Team Leader, Prediction and Insight |
| Client Focus – Internal | 60% |
| Client Focus – External | 40% |
| Number of Direct Reports | 0 |
| Enquire about this job | Uta Stockmann via email at [uta.stockmann@csiro.au](mailto:uta.stockmann@csiro.au) or  phone +61 2 6218 3464 |
| Support and Workplace Adjustments | We offer a range of reasonable supports and workplace adjustments. Please let Laura Mason know at [careers.online@csiro.au](mailto:careers.online@csiro.au) if we can help you to equitably participate in our recruitment process or the role itself. |
| 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) |

**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 equivalent** and will work closely with leading Research Scientists or Engineers in their respective fields**.**

In partnership with a diverse research team, this CERC Fellow will develop an industry-funded soil health framework for Australian agricultural production systems. The CERC Fellow will be a broad soil systems thinker and have a strong interest in using spatial approaches to solve challenges in measuring, valuing and reporting the status of Australia’s soil resources. Pedometric and data-driven tools will be used to develop Australian-specific soil health indicators and to create regionally tailored, quantitative methods for soil health scoring and benchmarking.

Joining the Soil and Landscapes Group in Canberra, the CERC Fellow will have access to world class laboratory facilities, rapid soil analysis technologies (e.g. NIR, MIR, pXRF), soil data and information systems, high-performance computing and a tailored career development program. Collaborating across a multi-disciplinary research team, including experts in pedometrics, digital agriculture, natural capital accounting, environmental economics and functional soil biology, and engaging with the Australian agricultural sector, the CERC Fellow will drive research that will enable growers, advisors and industry to quantitatively measure, monitor and report soil resource health and function.

The role will also provide opportunities to work closely with researchers and industry partners across Australia, including travel to key project regions and national workshops during the fellowship.

### Duties and Key Result Areas

Under the direction of senior research scientists and engineers, the CERC 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.
  + Contribute to the development of a soil health framework for Australian agriculture, taking into account current international and domestic literature, frameworks and expert opinion.
  + Integrate several tiers of spatially explicit, and where applicable, temporal soil data including conventionally measured, proximally and remotely sensed into tools and metrics to support soil health benchmarking and thresholding.
  + 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.
  + Record, manage, and analyse data/information using relevant domain data science techniques.
  + 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 and diversity initiatives.
  + 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**

**Please provide a response to each Selection Criteria, essential and desirable, in writing. Append your responses after 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). The doctorate must be in a relevant discipline area of soil science, such as soil condition and function assessment, pedometrics, digital soil mapping, soil spatial and temporal analysis.

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

1. A sound understanding of Australian and/or international broadacre farming systems and their management practices.
2. A sound understanding of soil systems, their spatial patterns, and the factors that influence variability across landscapes.
3. Applied experience in using statistical and mathematical tools to analyse and interpret soil data, spatial modelling, multivariate statistics 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.
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. A record of science innovation and creativity, including the ability and willingness to incorporate novel ideas and approaches into scientific investigations.
7. A current Australian driver’s licence or the ability to obtain one.

## **Desirable**

1. An understanding of natural capital accounting or sustainability reporting frameworks and their application to agro-ecosystems.
2. 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.
3. Demonstrated hands-on experience in predicting soil properties using remote or proximal tools, and the laboratory and data requirements for calibration and validation.
4. **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$96,811). 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.

**Setting You Up For Success**

We understand that not everyone works in the same way and sometimes people may require reasonable support and adjustments to perform at their best. Whether related to the recruitment process and or the role itself, this may include options such as providing different methods of communication, flexible hours or physical adjustments to work methods. If you feel comfortable, we encourage you to share any support and adjustments you may need to carry out the inherent requirements of the role. Please let us know via the contact details on Page 1 if we can help you to equitably participate in our recruitment process or the role itself*.*

**Life at CSIRO and Flexible Working Arrangements**

We [work flexibly at CSIRO](https://www.csiro.au/en/careers/life-at-csiro/Flexible-work), offering a range of options for how, when and where you work.  We can discuss flexible work arrangements with you during the recruitment process. CSIRO also offers a range of leave entitlements, [benefits](https://www.csiro.au/en/careers/life-at-csiro/Benefits) and [career development](https://www.csiro.au/en/careers/life-at-csiro/Career-development) opportunities. To learn more, visit [Careers at CSIRO](https://www.csiro.au/en/careers).

We celebrate the uniqueness of our workforce and are committed to creating [diverse and inclusive teams](https://www.csiro.au/en/careers/life-at-csiro/Diversity-inclusion-belonging) where everyone feels they belong. CSIRO is an equal employment opportunity organisation dedicated to recruiting people based on merit, and reflecting the diversity of the community we serve. We recognise true diversity encompasses all ages, nationalities, abilities, cultures, genders, sexualities, faiths, levels of education, diversity of thought and many more aspects of identity. By empowering diverse teams, our community is reflected in the solutions we create.

**CSIRO Values**

CSIRO is a values-based organisation committed to values-based leadership.

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| **Value** | **Descriptor** | **Behaviour** |
| **People First** | Our priority is the safety and wellbeing of our people. We believe in, and respect, the power of diverse perspectives. We seek out and learn from our differences. | * Respectful * Caring * Inclusive |
| **Further Together** | We achieve more together than we ever could alone. We listen and collaborate, in teams, across disciplines, across boundaries. We embrace ambiguity and use discussion and persistence to generate unique solutions to complex problems. | * Accountable * Authentic * Courageous |
| **Making it Real** | We do science with real impact. We thrive when taking on the big challenges facing the world. We take educated risks and defy convention. We celebrate successes and failures and leverage them to learn as we strive to be the force for positive change. | * Partnering * Cooperative * Humble |
| **Trusted** | We’re driven by purpose but remain objective. We fight misinformation with facts. We earn trust everywhere through everything we do. We trust each other and we hold each other accountable. Together our actions drive Australia’s trust in CSIRO. | * Curious * Adaptive * Entrepreneurial |

**Child Safety**

CSIRO is committed to the safety and wellbeing of all children and young people involved in our activities and programs. View our [Child Safe Policy](https://www.csiro.au/en/about/policies/child-safe-policy).

Special Requirements

Appointment to this role is subject to provision of a pre-employment background check and may be subject to other security/medical/character clearance requirements.

* The successful candidate will undertake a pre-employment background check. Please note that individuals 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/