# 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 target generation from magnetic data– *Deep Earth Imaging* Future Science Platform |
| Job Reference | 63333 |
| Tenure | Specified Term 5/12/2019 – 14/1/2021Full-time |
| Salary Range | AU$83,687 to AU$94,679 pa (pro-rata for part-time) + up to 15.4% superannuation |
| Location(s) | Kensington, WA |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | * All Candidates
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| Position reports to the | Team Leader (Advanced Inversion Methods) and Deep Earth Imaging Future Science Platform (CSIRO Minerals) |
| Client Focus – Internal | 80% |
| Client Focus – External | 20% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Dr Juerg Hauser via email at juerg.hauser@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 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 six years relevant postdoctoral work experience by the end of their fellowship. 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.

### Australia’s future mineral, energy and water resources will come from greater depths in the onshore regions and from deep offshore plays. Our ability to find, define and exploit mineral resources is limited by a deep and complex regolith that covers about 80% of the Australian land mass. Undiscovered conventional oil and gas lies in deeper or more subtle traps, or is being sourced from unconventional sources onshore that require new geophysical methods to quantify. The science of Deep Earth Imaging will help us to more precisely image and understand the significance of subsurface rock properties, which in turn will unlock the resource potential of this vast and relatively under-explored continent.

### As a part of this science effort, we seek an outstanding early career researcher with experience in processing magnetic data for the generation of exploration targets. We are particularly interested in experience with developing techniques that account for the influence of remanent magnetisation. The primary research will focus on recovering the architectural elements of mineral systems, with a secondary focus on groundwater system modelling and management, and hydrocarbon exploration.

### Duties and Key Result Areas:

* Under the direction of a senior research scientist, the CERC Postdoctoral Fellow will conduct innovative research aligned with the goals of the Deep Earth Imaging Future Science Platform that ideally leads to novel and important scientific outcomes around:
* The use of magnetic data for the generation of exploration targets in complex settings; and
* The development of magnetic data processing workflows in the presence of a remanent magnetisation.
* Engage and collaborate with the magnetic specialist community in Australia and overseas.
* Undertake regular reviews of relevant literature and intellectual property.
* Produce quality scientific and/or engineering papers suitable for publication in quality journals, presentation to clients, and/or applications for patents.
* Prepare and present conference papers as agreed with the Team Leader (Advanced Inversion Methods).
* Contribute to the development of innovative concepts and ideas for further research.
* Contribute to the effective functioning of the Deep Earth Imaging research team and help deliver to CSIRO’s organisational objectives, plans and strategies.
* Work collaboratively with colleagues within the Deep Earth Imaging team, the Mineral Resources, Energy, Data61, and Land and Water Business Units or other CSIRO Business Units as required.
* Adhere to the spirit and practice of CSIRO’s Values, Health, Safety and Environment plans and policies, Diversity initiatives and Zero Harm goals.
* Undertake an appropriate training and development program developed by CSIRO.
* 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.*

* A doctorate in mathematical geophysics or relevant discipline with a proven ability to implement geophysical workflows for magnetic data.

Please note: To be eligible for this role you must have **no more than 6 years** (or part time equivalent) of postdoctoral research experience by the end of your term.

1. Demonstrated experience in developing approaches to improve the processing of magnetic data in the presence of remanent magnetisation.
2. Proven experience with using magnetic data to generate exploration targets.
3. Demonstrated experience and skill in scientific programming.
4. High quality written and oral communication skills achieved through high-level reporting, publication, and presentation.
5. Ability to work effectively as part of a multi-disciplinary research team.
6. Motivation and self-discipline to conduct independent research.
7. A proven track record of science innovation and creativity with the ability and willingness to incorporate novel ideas and approaches into scientific investigation.

## **Desirable:**

1. Knowledge of a broad range of geophysical imaging techniques and their applicability for the recovery of structure and exploration targets.
2. Advanced code development skills, with a specific emphasis on high-performance computing, ideally in a Unix/Linux environment.
3. Remain productive, positive and resilient in complex, ambiguous and/or uncertain environments.
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.**

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$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, specifically.

* 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/)!

Find out more about CSIRO [Mineral Resources](https://www.csiro.au/en/Research/MRF)