# 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 Structural Geology – Deep Earth Imaging Future Science Platform |
| Job Reference | 66550 |
| Tenure | Specified Term of 1 year  Full-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 |
| Position reports to the | Theme Leader (Data Assimilation) 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 | Dr Luk Peeters via email at: luk.peeters@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](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. 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 minerals, 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 else is sourced from unconventional sources onshore that require new geophysical methods to quantify. The science of Deep Earth Imaging will help us 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 member of a growing, world-leading team of 25 researchers, the Postdoctoral Fellow will develop geostatistical techniques to characterize and simulate natural fault and fracture systems in 2D and 3D. This will be followed by the development of new approaches to numerically simulate fluid flow through faults and fractures to examine the effects structural features have on fluid migration. The primary research will focus on mineral systems, with a secondary focus on groundwater system modelling and management, and hydrocarbon exploration.

### Duties and Key Result Areas:

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

* Carry out innovative, impactful research of strategic importance aligned with the goals of *Deep Earth Imaging* that ideally lead to novel and important scientific outcomes:
* Develop geostatistical techniques to characterise networks of linear structural features from geological and geophysical data;
* Characterise and predict fluid migration behaviour along fault and fracture networks through numerical modelling.
  + 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.
  + Carry out research investigations requiring originality, creativity and innovation.
  + 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.
  + 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 Minerals, Energy, Data61, and Land and Water Business Units or other CSIRO Business Units as required.
  + Record, manage, and analyse data/information using relevant domain data science techniques.
  + 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 structural geology with a focus on numerical simulations.

Please note: To be eligible for this role you must have **no more than 5 years** (or part time equivalent) of postdoctoral research experience.

1. Exposure to a wide range of geostatistical approaches to simulating lithology, faults and property fields.
2. Demonstrated experience and skill in scientific programming.
3. Established professional network in Australia and overseas.
4. Evidence of high quality written and oral communication skills achieved through high-level reporting, publications, and presentations.
5. Ability to work effectively as part of a multi-disciplinary, research team.
6. Motivation and self-discipline to conduct independent research.
7. A record of science innovation and creativity with the ability and willingness to incorporate novel ideas and approaches into scientific investigation.
8. A sound history of publication in peer reviewed journals and/or authorship of scientific papers, reports, grant applications or patents.

## **Desirable:**

1. Advanced computing skills, with a specific emphasis on high-performance computing, ideally in a Unix/Linux environment.
2. Experience in numerical simulation of flow, heat and solute transport.

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$82,450).* 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.

**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)