# 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 Health Intelligence |
| Job Reference | 70866 |
| Tenure | Specified Term of 3 years |
| Salary Range | AU$88,163 to AU$96,573 pa + up to 15.4% superannuation |
| Location(s) | Westmead Health Precinct, Sydney |
| 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, Health Intelligence Team |
| Client Focus – Internal | 20% |
| Client Focus – External | 80% |
| Number of Direct Reports | 0 |
| Enquire about this job | Dr Sankalp Khanna via email: [Sankalp.Khanna@csiro.au](mailto:Sankalp.Khanna@csiro.au)  *Please do not email your application directly to Dr Khanna. Applications received via this method may not be considered by the selection panel.* |
| 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 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; 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.**

The Postdoctoral Fellow will join the Health Intelligence team within the CSIRO Health and Biosecurity Business Unit. This project is a joint undertaking with the University of Sydney and The Westmead Local Health District and will be based in the Westmead Newborn Intensive Care Unit (NICU). The Postdoctoral Fellow will work as part of a multidisciplinary team with other researchers from CSIRO and collaborators from Western Sydney Local Health District, Sydney Children’s Hospital Network and University of Sydney.

This is the exciting first collaborative project for a new data science group aiming to reduce mortality and permanent brain damage for survivors of newborn intensive care by develop new machine learning and artificial intelligence solutions for clinical decision support. Westmead NICU has a unique high resolution intensive care physiological database which has 9 years of continuous data collection for critical care in ill babies both preterm and term newborns babies. The Postdoctoral Fellow candidate will be embedded in a world class newborn intensive care research unit lead by Dr Mark Tracy. Specifically, extremely preterm babies are at high risk of developing acute life-threatening deterioration with conditions such as septicaemia and cardiopulmonary deterioration AI/ML methods may allow detection of imminent deterioration before the baby is clinically sick and thus allow successful intervention and much improved outcomes.

The Health Intelligence team is part of the Australian eHealth Research Centre (AEHRC), CSIRO’s digital health research unit delivering innovation to the health system. It is the largest eHealth research group in Australia with more than 100 research scientists working with clinicians and industry to identify the clinical and/or health challenges. AEHRC is worldwide and unique in covering the full value chain from basic science through to clinical application and assessing their impacts on Australian and international health systems. The Postdoctoral Fellow will join a growing team contributing towards significant research goals and delivering impact on national and international health policy aligned with the team’s strategies.

### Duties and Key Result Areas:

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

* Develop, validate and implement novel and interpretable machine learning algorithms and workflows for applications in healthcare such as improving productivity and efficiency, informing treatment effectiveness, risk stratification and clinical decision support.
  + Undertake a CERC Postdoctoral Fellow learning and development program.
  + Carry out innovative, impactful research of strategic importance to CSIRO that will, where possible, lead to novel and important scientific outcomes.
  + Obtain ethical and legal approval for use of health data.
  + Maintain confidentiality when accessing personal or sensitive information. This may include personal information relating to an individual’s health or commercially sensitive information of CSIRO and/or research or commercial partners.
  + Undertake regular reviews of relevant literature and patents.
  + Carry out autonomous research, produce high quality scientific and/or engineering papers suitable for publication in quality journals, for client reports and granting of patents.
  + Represent CSIRO and research partners through the preparation of appropriate conference papers and presentations at conferences as agreed with their supervisor.
  + Contribute to the development of innovative concepts and ideas for further research.
  + Make a contribution to the effective functioning of the research team and help deliver CSIRO’s organisational objectives and plans**.**
  + Recognise and exploit opportunities for innovation and the generation of 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.
  + 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 openly, effectively and respectfully with all staff, clients and suppliers in the interests of good business practice, collaboration and enhancement of CSIRO’s reputation.
* Work collaboratively as part of a multi-disciplinary, regionally dispersed research team to carry out tasks in support of CSIRO’s scientific objectives.
* 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.

1. 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 such as machine learning, artificial intelligence, computer science, statistics, data analytics, engineering, applied mathematics or applied physics.

**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 applying statistical methods and machine learning approaches for predictive modelling.
2. Proficiency with programming languages/packages, such as R and Python, including the ability to programme new analyses, clean and structure data, and develop and validate appropriate models.
3. Proven ability to work autonomously and as part of a team to prototype research ideas and develop them into demonstration and/or proof of concept systems.
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 & willingness to incorporate novel ideas and approaches into scientific investigations.

## **Desirable:**

1. Experience working in the health domain, especially with clinical data.
2. Experience working with physiological time-series data.
3. Demonstrated knowledge and skills in applying machine learning to solving real world scientific problems.
4. Remain productive, positive and resilient in complex, ambiguous and/or uncertain environments.
5. **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 ($85,361). 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.
* The successful candidate will be required to meet the requirements of working with the Western Sydney Local Health District and the Sydney Childrens Hospital. This will include obtaining a Working with Children Check (WWCC) and meeting NSW Health vaccination requirements.
* The successful candidate may be required to undertake a pre-employment medical examination prior to commencement.
* 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 that encourages diversity.  In your application and at interview you will need to demonstrate behaviours aligned to our values of:

* People First
* Further Together
* Making it Real
* Trusted

Find out more about CSIRO [Health and Biosecurity](https://www.csiro.au/en/Research/BF)