# Position Details

## Research Scientist/Engineer – CSOF5

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| The following information is for applicants |
| Advertised Job Title | Research Scientist – Biostatistics/Machine Learning |
| Job Reference | 88042 |
| Tenure | Specified Term of 3 years Full-time |
| Salary Range | AU$105,806 – AU$114,500 per annum plus up to 15.4% superannuation |
| Location(s) | Sydney (Westmead), NSW |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | * Australian/New Zealand Citizens
* Australian Permanent Residents
* Australian Temporary Residents, with either an existing visa allowing full work rights for the entire duration of the specified term (at least until the end of 2026) or requiring visa sponsorship from CSIRO
* Overseas applicants requiring visa sponsorship by CSIRO
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| Position reports to the | Team Leader |
| Client Focus – Internal | 80% |
| Client Focus – External | 20% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Kim Fung via email at Kim.Fung@csiro.au or phone +61 2 9490 8710 |
| 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. |

**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

The role of Research Scientist/Engineer staff is to conduct innovative research leading to scientific achievements that are aligned with CSIRO’s strategies. The Research Scientist/Engineer may be engaged in scientific activity ranging from fundamental research to the investigation of specific industry or community problems. The Research Scientist/Engineer will have the opportunity to build and maintain networks, play a lead role in securing project funds, provide scientific leadership and pursue new ideas and approaches that create new concepts.

The Research Scientist in this role will be part of the award-winning Molecular Diagnostics Solutions team, who have successfully developed and commercialised several diagnostics tests for colorectal cancer. They will work on the development of novel diagnostics and ex vivo technologies to accelerate preclinical research, and will contribute collaboratively by undertaking analysis to correlate medical data with patient phenotype for strategic projects within the Business Unit.

The role offers you an opportunity to utilise and build your broad set of biostatistics skills to assist and lead projects in biomarker identification, in silico modelling of biological platforms and work collaboratively with a talented molecular biology team to complete technical validation of new intellectual property. The Research Scientist will be exposed to a range of cutting-edge technologies pertaining to clinical diagnostics translation and contribute to the development of the project IP.

### Duties and Key Result Areas

* Utilise analytical skills as a biostatistician for complex data analyses in the search of novel biomarkers and conduct validation analyses across a range of projects.
* Undertake statistical modelling to assist with the development of ex vivo models for preclinical applications, including cancer therapy and infectious disease.
* Design and implement novel statistical or machine learning methods to solve real-world clinical problems.
* Under the supervision of more senior researchers, assist in the planning and preparation of research proposals and carry out research investigations, requiring originality, creativity and innovation.
* Draw on professional expertise, knowledge of other disciplines and research experience to recognise opportunities for innovation and generate new theoretical perspectives by pursuing new ideas/approaches and networking with scientific colleagues across a range of disciplines.
* Propose, develop, apply and employ innovative theories, statistical and machine learning tools and techniques for health data analytics projects in predictive modelling, identification of biomarkers features and driving evidence-based approaches across a range of health-related applications.
* Present complex statistical results in a meaningful format to a diverse audience, prepare reports for clients and/or write scientific papers for publication.
* Develop statistical methodology and/or adapt existing methods in novel and creative ways to meet the group's research objectives.
* Utilise various analytic and statistical methodologies to evaluate, select, interpret and validate data. Record study results and interpret the findings in terms of their scientific significance.
* Work collaboratively and honestly with internal and external colleagues, clients and partners to develop and progress challenging but realistic research plans for a range of research projects.
* 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.
* Adhere to the spirit and practice of CSIRO’s Code of Conduct, Health, Safety and Environment procedures and policy, Diversity initiatives and Zero Harm goals.
* Other duties as directed.

## **Selection Criteria**

#### Essential

*Under CSIRO policy only those who meet all essential criteria can be appointed.*

1. A PhD, or an equivalent combination of qualifications and research experience, in a relevant field such as biostatistics, statistics, mathematics, epidemiology, computer science or a related discipline with comparable experience.
2. Demonstrated experience in the application of statistical and/or machine learning methods in the field of health or medicine, including in the development and implementation of generalised models, internal and external validation approaches, identifying ideal biomarker values to optimise predictive performance, survival analyses and supervised and unsupervised feature selection, predictive modelling.
3. Demonstrated experience in the selection of a wide range of statistical methodologies for the development of workflows to address broad research questions.
4. Extensive experience in modern coding languages for statistical computing (R, Python, Julia preferred), including libraries relevant for biostatistics and machine learning, such as Bioconductor or scikit-learn.
5. Demonstrated ability to undertake original, creative and innovative research by generating and pursuing novel ideas and solutions to scientific research problems.
6. A demonstrated publication history of authorship on scientific papers in peer reviewed journals and/or reports, grant applications or inventorship on patent applications.
7. The ability to work effectively as part of a multi-disciplinary research team and carry out tasks in a timely manner or to tight deadlines under general direction from senior scientists.

## **Desirable**

1. Experience in adapting statistical or machine learning approaches and workflows due to unforeseen challenges.
2. Demonstrated experience designing, applying and interpreting statistical learning or machine learning based classifiers.
3. Experience in reproducible workflows and programming, including experience with version control platforms such as Git, BitBucket, GitHub.

## **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 responses by adapting/creating and testing alternative solutions.
* **Independence:** Plans, sets and works to meet challenging standards and goals for self and/or others. Recognises where endeavours will make the most impact or difference, decides on desired outcome and sets realistic goals to reach this target.
* **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 change.

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 Clearance or equivalent. Please note that individuals with criminal records are not automatically deemed ineligible. Each application will be considered on its merits.

## **About CSIRO**

We solve the greatest challenges through innovative science and technology. Visit [CSIRO Online](http://www.csiro.au/) and [CSIRO Health & Biosecurity](https://www.csiro.au/en/about/people/business-units/Health-and-Biosecurity) for more information.

CSIRO is a values-based organisation.  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