# Position Description

## Research Scientist/Engineer – CSOF5

The following information is for applicants

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| Advertised Job Title**:** | Research Scientist – Genome Informatics |
| Job Reference: | 62064 |
| Relocation Assistance**:** | Will be provided to the successful candidate if required. |
| Applications Are Open To: | Australian Citizens Only  Australian/New Zealand Citizens and Australian Permanent Residents Only   * All Candidates |
| Percentage of Client Focus - Internal: | 0% |
| Percentage of Client Focus - External: | 100% |
| Reports to the: | Team Leader – Crop Bioinformatics and Data Science |
| Number of Direct Reports: | 0 |
| Name and Contact Details For Applicant Enquiries | Dr Alex Whan, 02 62421666 or alex.whan@csiro.au  Please do not email your application directly to Dr Alex Whan. Applications received via this method will not be considered by the selection panel. |
| Contact Details For Applying | Call 1300 984 220 or email [careers.online@csiro.au](mailto:careers.online@csiro.au). |
| How to Apply: | Please apply online at [jobs.csiro.au](https://jobs.csiro.au/) and enter the requisition number**.** Internal applicants please apply via ‘Jobs Central’ through the ‘People Hub’ icon |

## Role Overview:

The role of Research Scientist Staff in CSIRO is to conduct innovative research leading to scientific achievements that are aligned with CSIRO’s strategies. You may be engaged in scientific activity ranging from fundamental research to the investigation of specific industry or community problems. You 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.

This role will focus specifically on development of web based visualisation of complex genomic datasets, and developing methods to more completely exploit multi-genome, multi-omic data. This will include data integration that relies on graph-theoretical structures and application of graph-based software solutions in biological contexts.

The role will interact with internal and external stakeholders to deploy or develop appropriate analytical and visualisation approaches depending on requirements. This will include orchestration and management of a heterogeneous code-base and rely on in-depth knowledge of several programming and scripting languages and frameworks.

## Duties and Key Result Areas:

* Software development including front and back end web technologies (ember, d3, mongoDB)
* Development of innovate and reproducible computational solutions for complex polyploid genomes
* Development of comparative genome analysis workflows using modern workflow management technology such as NextFlow
* Liaise with research partners to determine their needs and develop appropriate analytical solutions
* Under limited direction, assist in the planning and preparation of research proposals and carry out research investigations, requiring originality, creativity and innovation.
* Present results in a meaningful format, prepare reports for clients and/or write scientific papers for publication.
* Address problems promptly and in a constructive manner, selecting the most profitable lines of attack upon a problem, preparing detailed design proposals and experimental protocols.
* Undertake in experimental and/or observational research activities, often requiring the supervision and/or training of others to ensure experiments are established in accordance with research design, or as required.
* Draw on professional expertise, knowledge of other disciplines and research experience, recognise opportunities for innovation and generate new theoretical perspectives by pursuing new ideas/approaches and networking with scientific colleagues across a range of disciplines.
* 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, often regionally dispersed research team, and business unit to carry out tasks in support of CSIRO’s scientific objectives.
* Adhere to the spirit and practice of CSIRO’s Code of Conduct, Health, Safety and Environment plans and policies, Diversity initiatives and Zero Harm goals.
* Other duties as directed.

## Competencies:

1. ***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.***
2. ***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.***
3. ***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.***
4. ***Judgement and Problem Solving:*** *Investigates underlying issues of complex and ill-defined problems and develops appropriate response by adapting/creating and testing alternative solutions.*
5. ***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.**
6. **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:

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

1. A doctorate or equivalent research experience in a relevant discipline area, such as genetics, bioinformatics or information science.
2. Experience with the design and deployment of fully containerised analytical workflows using technology such as NextFlow.
3. Experience in at least one of R, Python or Perl as well as experience in utilising enterprise scale high-performance computing environments.
4. Experience in front and back end web development and database, including ember.js, d3.js, node.js and mongoDB.
5. Extensive experience in method development and bioinformatics analysis of non-model species including a solid understanding of challenges in the application of sequence assembly, alignment, and alignment-free analytical approaches for large, repetitive polyploid genomes and transcriptomes.
6. **The ability to work effectively as part of a multi-disciplinary, regionally dispersed research team, and carry out independent individual research, to achieve organisational goals.**
7. A record of science innovation and creativity plus the ability & willingness to incorporate novel ideas and approaches into scientific investigations.

## Desirable Criteria:

1. Experience in the analysis of polyploid genomes including genome assembly or haplotype inference approaches.
2. Experience with, or knowledge of, reproducibility and version control approaches for computational biology.
3. Experience in graph analysis methods or similar that could be used to interrogate complex network or pathway interactions.

## Special Requirements:

None

## About CSIRO:

We imagine. We collaborate. We innovate. To find out more visit us [online](http://www.csiro.au/)!

Find out more about CSIRO [Agriculture and Food](https://www.csiro.au/en/Research/AF)