# Position Details

## Research Projects- CSOF5

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| The following information is for applicants | |
| Advertised Job Title | Bioinformatics Research Technician |
| Job Reference | 77882 |
| Tenure | Specified term of 2 years (with possibility for extension)  Full-time |
| Salary Range | AU$100k - AU$108k per annum, plus up to 15.4% superannuation |
| Location(s) | Black Mountain (Canberra) ACT |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | * Australian Citizens and Permanent Residents * New Zealand Citizens * Australian temporary residents who have the right to work for the expected duration of the term (at least to end of December, 2023), with no requirement for sponsorship. |
| Position reports to the | ANIC Team Leader Phylogenomics |
| Client Focus – Internal | 80% |
| Client Focus – External | 20% |
| Number of Direct Reports | 0 |
| Enquire about this job | Andreas Zwick via email [Andreas.Zwick@csiro.au](mailto:Andreas.Zwick@csiro.au) or phone 02 6246 4289 |
| 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

The Bioinformatics Research Technician position is based in the Australian National Insect Collection (ANIC) in Canberra, and will work closely with research scientists and technicians from the ANIC and other National Research Collections and State Collections. The position will support the [National Biodiversity DNA Library initiative](https://research.csiro.au/dnalibrary/), which is building a library of DNA reference sequences based on taxonomically identified collection specimens. These sequences provide references for a variety of molecular species identification and cutting-edge biodiversity survey methods, e.g., DNA barcoding of individual specimens, meta-barcoding and eDNA surveys. The eDNA sampling of aquatic and terrestrial environments is poised to revolutionise the way we [monitor Australia’s natural environment](https://ecos.csiro.au/edna-barcode-library/), but it relies on a complete reference library of DNA barcodes.

As part of a team, the Bioinformatics Research Technician carries out the bioinformatic work for the National Biodiversity DNA Library and related projects. This includes primarily the use of established bioinformatics pipelines on HPC resources, data quality checking, data management and delivery of digital data (DNA sequences, images, metadata) for many thousands of Australian animal and plant specimens in a high-throughput fashion. Our current processing pipelines are recent developments, and the Bioinformatics Research Technician uses initiative to improve and continue the development of these pipelines and workflows.

The [National Biodiversity DNA Library](https://research.csiro.au/dnalibrary/) will be a globally unique and significant national infrastructure. It is powered by developments from the CSIRO’s [Environomics Future Science Platform](https://research.csiro.au/environomics/), in particular novel platform technology for [high-throughput collection genomics](https://research.csiro.au/environomics/team-research-projects/high-throughput-collection-genomics-of-highly-variable-dna-samples/) for the large-scale sequencing of whole genomes from old specimens in the National Research Collections Australia and other collections. The combination of degraded / fragmented DNA from up to 150 year old samples and high-throughput DNA sequencing poses a unique challenge, and High Performance Computing (HPC) resources are used to piece together the genomic information and validate the data in the face of low sequence read coverage.

### Duties and Key Result Areas

* Liaise with internal and external stakeholders to understand their needs for DNA sequence analyses, data quality and delivery of results.
* Carry out bioinformatic processing of DNA sequence and specimen data that includes, but is not limited to, high-throughput DNA assembly and annotation, data validation and digital product delivery.
* Contribute to the improvement and development of cutting-edge platform technology.
* Help establish and use, or interface with, a Laboratory Inventory Management System (LIMS) to track samples, laboratory products and data throughout the process.
* Work collaboratively across the collections to support the relocation to the new facility.
* Make significant contributions to the documentation and dissemination of software development and may collaborate on drafting presentations to, and/or detailed written reports for, clients and the scientific and/or technology community.
* Under general direction participate in planning projects and accept responsibility for the scheduling and completion of major parts of projects.
* Provide coaching, on-the-job training and instruction to colleagues, on activities pertaining to the immediate work area and responsibilities, allocate activities, direct tasks and manage resources to meet objectives, as required.
* Adapt and/or develop original experimental concepts and software in support of existing and further research, promptly addressing where methods may not be defined and initiative is required in seeking new approaches to meet experimental and/or technological needs.
* 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 team 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 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 relevant qualification or equivalent work experience in bioinformatics or programming.
2. Extensive practical experience in the processing and analyses of DNA sequence data.
3. Proven ability to efficiently process large data sets on High Performance Computing (HPC) resources.
4. A demonstrated ability and willingness to ensure data quality through automated and careful manual QC checks.
5. A track record of reliable data management, backing up and workflow documentation.
6. A history of both successful teamwork and working independently to meet agreed objectives.

## **Desirable**

1. Experience in the development and/or optimisation of data processing pipelines on HPC resources and/or in workflow management with Snakemake, Nextflow, Reflow.
2. Experience scripting in Python, Perl, BASH and/or programming languages.
3. Experience with data management using and interfacing with Laboratory Inventory Management Systems (LIMS) and data repositories (e.g., CSIRO’s DAP, NCBI’s GenBank).
4. Knowledge of molecular genetics, taxonomy and/or biology.

## **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 team 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:** Sets up and maintains effective and efficient work teams and manages performance and resources, to achieve objectives. Chooses appropriate management strategies and communication styles to maintain high levels of motivation and productivity. Gives feedback for development purposes and provides support and direction for improvement.
* **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:** 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 changes.

Special 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. To find out more visit us at [CSIRO Online](http://www.csiro.au/)

Find out more about the CSIRO [National Research Collections Australia](https://www.csiro.au/en/about/facilities-collections/Collections)

Find out more about the CSIRO [Environomics Future Science Platform](https://research.csiro.au/environomics/)

Find out more about the CSIRO [High-throughput Collection Genomics project](https://research.csiro.au/environomics/team-research-projects/high-throughput-collection-genomics-of-highly-variable-dna-samples/)

Find out more about CSIRO’s role in the [National Biodiversity DNA Library](https://research.csiro.au/dnalibrary/)

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