

<b>Position Title</b>	Research Associate (Bioinformatics)
<b>Classification</b>	Level A
<b>School/Division</b>	Medical School
<b>Centre/Section</b>	Centre for Medical Research
<b>Supervisor Title</b>	Professor
<b>Supervisor Position Number</b>	318303
<b>Position Number</b>	322422

## Your work area

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UWA's Medical School brings together the brightest students, experienced clinicians and committed researchers to unlock the greatest health challenges of our day. Celebrating 60 years in 2017, the Medical School is an infinite source of teaching and learning for individuals who share our goal of delivering better health outcomes today and into the future.

This position is based within the Systems Biology and Genomics Laboratory, led by Professor Alistair Forrest and is part of the UWA Centre for Medical Research within the Faculty of Health and Medical Sciences, based at Harry Perkins Institute of Medical Research (Perkins) in Nedlands.

The Forrest Group is a cutting-edge research lab specializing in advanced transcriptome techniques, including single-cell and spatial transcriptomics. Our multi-disciplinary team of molecular, cellular and computational biologists collaborates to unravel complex biological questions in both genomics and cancer research. We are leading the Western Australian Cancer Single Cell initiative which is using single-cell, single-nuclei and spatial transcriptomic profiling to characterize hundreds of tumour samples kindly donated by patients around Perth. We are seeking a talented and motivated Bioinformatics Postdoctoral Researcher to join our dynamic team. The Systems Biology and Genomics lab has a strong focus on analysis of genome-wide datasets to better understand how tumours work as a cellular ecosystem.

## Reporting structure

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Reports to: Senior Principal Research Fellow

## Your role

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As the appointee, you will, under minimal supervision, perform computational processing and analysis of sequencing datasets, maintain and develop bioinformatics pipelines, interpret results, and contribute to manuscript writing. The primary focus will be on analysing single-cell and spatial transcriptomics datasets, with potential opportunities to work on other datasets, such as Hi-C and bulk RNA-seq.

## **Your key responsibilities**

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Analyse high-dimensional genomics and genetics data, including bulk, single-cell, and spatial transcriptomic datasets.

Maintain and develop bioinformatics pipelines for data preprocessing, incorporating new tools using the Nextflow framework.

Reanalyse relevant publicly available datasets and integrate with those generated in house.

Create clear, informative visualizations to effectively communicate results.

Collaborate closely with wet-lab biologists to integrate computational and experimental findings.

Contribute to scientific publications and present findings at conferences.

Supervise students and research assistants.

Perform troubleshooting of experiments carried out by those under their direct supervision.

Present summaries of the projects at lab and institutional meetings.

Other duties as directed.

## **Your specific work capabilities (selection criteria)**

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### **Qualifications and / or certifications**

PhD in Bioinformatics, Computational Biology, Data Science, Computer Science or a related field.

### **Position specific capabilities**

Strong programming skills, with proficiency in Python, R, or other relevant languages.

Experience with bioinformatics tools and libraries for genomics analysis (e.g., Seurat, Scanpy, Cell Ranger, Nextflow, Singularity, Docker).

Expertise in machine learning techniques and deep learning frameworks (e.g., TensorFlow, PyTorch, scikit-learn).

Experience with spatial transcriptomics analysis tools (e.g., Visium, Xenium).

Knowledge of multi-omics data integration (e.g., scRNA-seq, scATAC-seq).

Experience with image segmentation is desirable.

Experience with reuse of large public datasets (TCGA, UK Biobank, gnomAD) is desirable.

Experience with cell-to-cell communication analysis is desirable.

### **Research**

Demonstrated commitment in participating in high quality research evidenced by peer-reviewed journal articles published in respected scholarly journals.

### **Service/ Engagement**

Excellent written and verbal communication skills, with the ability to collaborate effectively in interdisciplinary teams and convey complex results to both technical and non-technical audiences.

Ability to work independently, show initiative, problem solve and work productively as part of a team.

Highly developed organisational skills with the demonstrated ability to set priorities and to meet deadlines.

### **Teaching and learning**

Demonstrated ability to supervise students and research assistants.

### **Special requirements (selection criteria)**

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There are no special requirements.

### **Compliance**

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Ensure you are aware of and comply with legislation and University policy relevant to the duties undertaken, including:

The University's Code of Conduct [hr.uwa.edu.au/policies/policies/conduct/code/conduct](http://hr.uwa.edu.au/policies/policies/conduct/code/conduct)

Inclusion and Diversity [web.uwa.edu.au/inclusion-diversity](http://web.uwa.edu.au/inclusion-diversity)

Safety, health and wellbeing [safety.uwa.edu.au/](http://safety.uwa.edu.au/)