

<b>Position Title</b>	Research Associate
<b>Classification</b>	Academic, Level A <b>(or B)</b>
<b>School/Division</b>	Medical School
<b>Centre/Section</b>	Centre for Medical Research
<b>Supervisor Title</b>	Senior Principal Research Fellow
<b>Supervisor Position Number</b>	318303
<b>Position Number</b>	FSR

## Your work area

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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 lab is comprised of molecular, cellular and computational biologists, forming a multi-disciplinary team environment undertaking a diverse range of genomics and cancer single cell 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. You will play a key role in this high impact project by developing and applying new methods for studying ligand-receptor mediated cell-to-cell communication between normal cell types and tumour cells.

## Reporting structure

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Reports to: Senior Principal Research Fellow

Dotted line reports to:

Direct reports:

Dotted line reports:

## Your role

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As the appointee, you will have the opportunity to work in a multidisciplinary team of molecular biologists and bioinformaticians that are applying experimental and computational approaches to map ligand-receptor interactions in normal and tumour tissues.

Your role will be in the development of cell-based and ex-vivo tissue assays coupled with single cell and spatial transcriptomics to study interactions between cell types. You will under minimal supervision, trial different approaches to map cell-to-cell communication networks using single cell and spatial assays. You will work to develop methods, interpret results and write manuscripts. This position will provide the opportunity to learn a wide variety of methods in biochemistry, cell and molecular biology and bioinformatics.

## Your key responsibilities

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**Design and perform** a wide variety of research laboratory tasks and experiments, making detailed observations, analysing data, and interpreting results with the help of supervisors.

**Transcriptionally profile** cells and tissues using **single cell RNA-seq, single nuclei RNA-seq** and **spatial transcriptomics**

**Culture and perturb** cells (and potentially ex vivo tissue cultures) using a variety of agents (CRISPR, siRNA, drugs, growth factors)

**Draft manuscripts** for publication in scientific journals including generating the text and publication quality figures.

**Present** summaries of the project at lab and institutional meetings, and at conferences

**Write** regular reports summarising the analyses conducted, the results obtained, your interpretation of the results and suggestions of next steps including troubleshooting

**Document** standard operating procedures for each method

**Supervise** students and research assistants

**Perform** troubleshooting of experiments performed by those under your direct supervision

**Prepare** human ethics, GMO, grant reports and other regulatory documents

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

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A PhD or equivalent in cell biology, developmental biology, molecular biology, pharmacology, genomics, systems biology, cancer biology, pathology or related fields.

### **Essential**

Highly experienced in the use of cell and/or ex-vivo tissue culture to study any aspect of human and/or mammalian biology

Demonstrated capacity to form hypotheses, test them and follow through to draft and publish papers in any of the above areas

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

Strong attention to detail, organizational skills, and maintenance of highly accurate and comprehensive records

The ability to supervise research assistants and students

### **Desirable**

Experience with protein labelling chemistries and purification of tagged proteins

Experience with tissue mounting, sectioning, staining for immunohistochemistry and/or in situ hybridization, imaging and interpretation of stained sections

Experience with cellular perturbation (CRISPR, siRNA, small molecules, growth factors etc.)

Experience with ligands, receptors, developmental gradients, microenvironments and/or niches

Experience with single cell, single nuclei or spatial transcriptomic methods (and other NGS datasets)

Experience in developing and troubleshooting new assays

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

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Comply with Human and Animal Ethics requirements

Some out of hours work may be required

## **Compliance**

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## POSITION DESCRIPTION

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](https://hr.uwa.edu.au/policies/policies/conduct/code/conduct)

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

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