



POSITION DESCRIPTION

Position	Bioinformatician (ANPC)		
Position Number	3959A01/3961A01	Level/Classification	HEW0809
Reports to	ANPC Senior Operations Manager		
Unit	Australian National Phenome Centre		
Directorate	Health Futures Institute		
Positions Supervised	Nil		

Position Purpose

The ANPC is a world-class facility led by Murdoch University focused on high-throughput targeted and exploratory metabolic phenotyping. The ANPC is located on Level 3 of the Harry Perkins Institute of Medical Research adjacent to the Fiona Stanley Hospital, Western Australia, and is the largest dedicated facility for metabolic phenotyping in the world. The ANPC houses the largest collection of mass spectrometers and nuclear magnetic resonance instruments dedicated to phenomics research.

The position of Bioinformatician is a unique role required to develop and apply high-fidelity computational and statistical modelling pipelines for large-scale metabolic phenotyping. ANPC Bioinformaticians collate, manage and study metabolic phenotyping data derived in-house using dedicated databases and informatics pipelines; key duties include the application of data (pre-)processing workflows and to perform data modelling tasks for statistical evaluation, result visualisation and contextualization.

The ANPC Bioinformatician is PhD qualified (or possessing equivalent work experience) in chemistry, biology or computer science with a focus on bioinformatics, metabolomics, analytical chemistry or a related field. Experience with nuclear magnetic resonance (NMR) and mass spectrometry (MS) derived data and related data (pre)processing software is necessary for this role. The ANPC Bioinformatician has relevant research experience in bioinformatics with application to computational biology and will possess considerable experience in programming languages common to metabolomic phenotyping/ metabolomics (eg. R, Python or MATLAB). Proficiency in handling large data volumes, as well as the application of statistical methods suitable for omics data (eg principal components analysis and related supervised methods, statistical model validation techniques, sample size power analysis, etc) are also essential skillsets.

This position works collaboratively with other academic and technical specialist staff in order to develop novel analytical and informatics approaches in accordance to the requirements and expectations of the ANPC, as directed by Senior managers and Academics within the Facility. The Bioinformatician reports to the ANPC Senior Operations Manager. The Executive Director of the ANPC is Professor Jeremy Nicholson.

About Murdoch University

Murdoch University helps people discover how to make a difference, through education and research endeavour, and remains one of the most inclusive universities in the country, providing students with quality education and recognised academic standing within an engaging and caring environment. We are a university for all, irrespective of background and social standing with a focus on social equity, self-direction and freedom of thought and belief.

With strong links to government, business and the community, Murdoch University helps people discover how to make a difference. We are a young, innovative and enterprising university with more than 23,000 students and 1,700 staff across Perth, Singapore and Dubai. We are committed to high quality education, innovative research, and strong community engagement both locally and internationally.

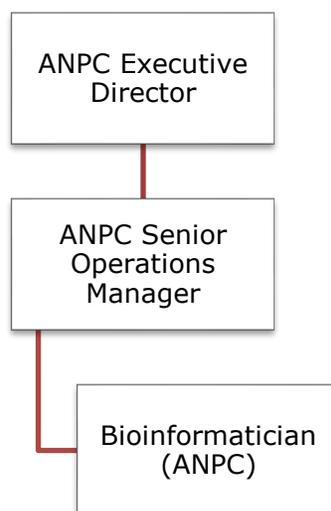
Our [Strategic Plan and Future Horizon 2017-2027](#) outlines an ambitious blueprint for development and growth, with a focus on one purpose: to be a creative force for current and future generations.

We are clear about our two core goals: to educate free thinkers who thrive in society and are sought after by employers; and, to provide life changing solutions for the world's big challenges through our outstanding translational research and innovative practice.

About the Work Area

The ANPC is a dedicated facility established for the purpose of performing "industrial-scale" metabolic phenotyping using an array of state-of-the-art analytical instruments including Nuclear Magnetic Resonance and Mass Spectrometers. This role will be responsible for the development and application of new bioinformatics methods and pipelines for the acquisition of multi-modal metabolic data. In particular, the bioinformatician will work closely with a dedicated team involved in a Medical Research Future Fund Project entitled "Molecular phenomic approaches to improve understanding of Post-Acute COVID-19 Syndrome".

Reporting Relationships



Key Responsibilities/Duties

1. As directed, to take responsibility for experimental design, data analysis, statistical modelling, and preparation of reports for designated projects,
2. To participate in the research and development of new methods and pipelines for the processing, integration and visualization of data derived from MS, NMR and other ANPC instrumental platforms,
3. Provide informatics support and advice to technicians and specialists to ensure seamless execution of metabolic phenotyping workflows and harmonization of methodologies,
4. Monitor ongoing quality control and reporting of analytical data as well as informatics output,
5. To support and contribute towards manuscripts and grant applications as requested,
6. To present scientific research results and interpretation to internal and external clients and research collaborators,
7. To maintain up-to-date knowledge in the field of metabolic phenotyping and bioinformatics.
8. Carry out, and assist with, other duties as required

Selection Criteria

Essential

1. A PhD in computer science, computational biology, chemistry, or equivalent experience in a relevant discipline with a focus on metabolomics and metabolic phenotyping.
2. Demonstrated knowledge in the development and application of bioinformatics tools and biostatistical methodologies common to the field of metabolomics and metabolic phenotyping.
3. Experience in the development of data analytics workflows and pipelines.
4. Proficiency in programming languages such as R, Python, MATLAB and/or JavaScript
5. Experience in the analysis of large-scale data sets, especially data derived from mass spectrometry and nuclear magnetic resonance spectroscopy.
6. Willingness to work as part of a team and to be open-minded and cooperative.

Desirable

1. Construction and curation of computational workflows and databases.
2. Skillfulness in ML model training and validation.
3. Experience in using Unix/Linux operating systems.
4. experienced in applying concurrent data -processing methods.
5. practical knowledge of the version control system git.
6. Healthy work attitude and the ability to work outside of normal office hours as required.
7. Strong communication skills.
8. Discipline and regard for confidentiality and security at all times.
9. Excellent time management skills.

Work Requirements

1. The occupant of this position will be required to undertake a criminal record check in accordance with the University's Employee Background Checks Procedure.
2. Be able to provide evidence of appropriate vaccination or immunity in accordance with the University's Immunisation Policy.
3. This role has been identified as requiring mandatory COVID19 Vaccination. You will be required to provide evidence of appropriate vaccination for COVID-19 in accordance with the relevant government mandate (or formally granted medical exemption) to be employed in this position.

Guiding Principles and Values/Code of Ethics and Code of Conduct

The founding principles upon which Murdoch University was established continue unabated today. We continue to be guided by the principles of:

- Equity and Social Justice
- Opportunity
- Sustainability
- Global Responsibility

These Murdoch principles come to life through our culture as evidenced by being an institution where the following are clear:

- Integrity
- Respect and Diversity
- Purpose
- Excellence and Future-focus

All staff will comply with the University's Code of Ethics and Code of Conduct and demonstrate a commitment to its Equity, Diversity and Safety principles and the general capabilities of personal effectiveness, working collaboratively and demonstrating a focus on results.

All Staff are to complete a Development Review Annually. Details of the University policies on Development Review can be accessed [here](#). A Commencing Development Review should be completed within 3 months of commencement.