Position Description

Position Title:	Data Architect
Salary Range:	Individual Contract
Reporting Manager:	Jennifer Piscionere - Population Analysis Co-Lead
Direct Reports:	None
Home Group:	Centre for Population Genomics

Who are we?

The Murdoch Children's Research Institute (MCRI) is home to significant scientific discoveries. We believe there is an answer, a cure or a better treatment for every childhood condition — and we're determined to find it.

We are a diverse team of world-leading researchers, doctors, engineers, and hardworking professionals in corporate and scientific services from all corners of the world with one shared goal — to transform child health worldwide.

Our strength lies in our partnership and co-location with The Royal Children's Hospital and the University of Melbourne — the Melbourne Children's Campus. This rare model amplifies opportunities to translate research into clinical care quickly.

At MCRI, you'll also find our subsidiary organisation, the Victorian Clinical Genetics Services (VCGS), a specialist childhood, prenatal and adult genetics service. VCGS provides an integrated genetic consultation, counselling, testing and diagnostic support service to children, adults, families and prospective parents.

Together, we share a powerful vision: re-imagine the future of child health.

What is the Centre for Population Genomics?

The Centre for Population Genomics is a collaborative initiative of the Garvan Institute of Medical Research (Garvan) in Sydney and MCRI in Melbourne. The Centre is directed by Daniel MacArthur who previously led a team at the Broad Institute of MIT and Harvard in Boston that was responsible for the development and open release of the Genome Aggregation Database (gnomAD), a collection of genetic data from over 140,000 individuals that has become one of the most widely-used reference databases in human genetics.

The Centre is focussing on developing cutting-edge tools and resources to facilitate the conversion of genomic data into improved diagnosis and treatment. Ultimately, the Centre will generate and manage the largest sets of genomic and clinical data ever assembled in Australia and apply these to solve various scientific and medical problems.

The OurDNA research program is CPG's flagship project designed to increase the genomic representation of Australian communities from African, Asian, Middle Eastern and Oceanian backgrounds, as well as Aboriginal and Torres Strait Islander communities. The need for inclusive representation is urgent, as many genomically under-represented Australian populations experience poorer health outcomes than other Australians. The aim of the OurDNA project is to create genomic resources that are more representative of Australia's diversity. Our team will work with community stakeholders to co-design culturally aligned and scalable approaches for community engagement, recruitment and data sharing. The overall aim of the OurDNA program is to improve the inclusion of

communities of diverse ancestry in genomic research and contribute to making the benefits of genomic medicine accessible to all Australians.

What is it like to work for us?

We are committed to ensuring a positive working environment that values all backgrounds and experiences. We cultivate an inclusive culture that is underpinned by an equal opportunity for all and a culture based on respect, consideration and dignity. We are also committed to developing our people and fostering an environment where learning and development are central to our staff reaching their full potential.

Our Values

- We remember our data come from people
- We do things that matter even if they are hard
- We share accountability
- We support each other
- We celebrate our differences

Position Overview

We are seeking a Data Architect to join the Population Analysis team at the Centre for Population Genomics. This is an excellent opportunity to be involved in providing expert solution design, architectural guidance and performing technical analysis across data platforms within the health and medical research space. You will be working closely with both the OurDNA and Software teams.

The Data Architect will manage the data architecture and modelling for the current needs of the OurDNA project, such as the participant recruitment workflow, as well as for future requirements, like return of results and data access workflows. You will help define the current state of the OurDNA data architecture, along with designing our scale-up data architecture aligning to the long term goals of the OurDNA project. You will work closely with the Software team to design integration solutions for a diverse range of data sources including Laboratory Information Management Systems (LIMS), customised participant portal, our own CPG infrastructure, and Pathology Labs so that the OurDNA and Population Analysis teams have a coherent and actionable picture of the OurDNA participant information and genomic data. This will require you to work closely with both the Population Analysis and OurDNA team to determine current and future requirements from both a scientific analysis and operations management perspective. You will also be in direct contact with external vendors to ensure any architectural decisions are consistent and actionable.

Success in this role requires attention to detail, a strong technical background, and a passion for translating data into meaningful information. You will be passionate about delivering user-centric solutions that work within our existing platforms. The individual will enjoy working within a challenging operational environment, conducting activities across two institutes and with local and international collaborators. As such, this individual will relish the challenge of developing practical and efficient solutions accepted by varied stakeholders. At CPG, we're looking for someone who is motivated to use their technical skillset to make a meaningful contribution to society.

The CPG is committed to supporting the responsible, progressive, inclusive and safe sharing of genomic and health data to drive medical research and improve human health. This individual will ensure that the CPG's policies and practices reflect our data management values (respecting participants, protecting genomic and health information and data sharing) and that we comply with relevant institutional policies, national regulations and international data sharing frameworks.

The Centre operates under a remote-first model, meaning that this role could be based at either of our physical sites in Sydney or Melbourne, or potentially at other locations in Australia. The Centre holds quarterly face-to-face meetings in Sydney and Melbourne, which will require some travel. Otherwise, this is an extremely flexible role in terms of location and working hours.

The Data Architect will report to Jennifer Piscionere (Population Analysis Co- Lead). They will work closely with the Analysis, Software, and OurDNA teams to define the data architecture of the OurDNA participant recruitment and data analysis workflows. The Data Architect will work closely with external stakeholders who capture and store our participant data, such as pathology labs and our participant portal provider WeGuide.

Key Accountabilities

- Overarching responsibility for the data architecture of the OurDNA program, specifically around participant recruitment and genomic data analysis workflows.
- Lead the design of complex solutions, in collaboration with the OurDNA and Software teams, for end-to-end data workflows from pathology labs and CRMs to metadata management and business intelligence tools.

- Ensuring that data from under-represented and marginalised groups is treated with the utmost respect and is securely handled at all stages.
- Managing data flow and coordination across the project through effective vendor management and collaboration.
- Facilitate architectural decisions across teams to ensure solutions are consistent, sustainable, flexible and readily adopted.
- Capture requirements from a range of technical and non-technical stakeholders, including scientists, software engineers and project managers.
- Ability to articulate data architecture and data best practice to technical and non-technical audiences.
- Collaborate on technical decision making, planning, implementing and documenting data products and pipelines with the relevant teams.
- Indirect mentorship and technical leadership of junior team members and peers
- All staff are required to comply with Garvan's workplace policies (as amended from time to time) and especially Garvan's Work Health & Safety (WHS) Policy, including working in accordance with the WHS management system at all times, as safety is Garvan's number one priority.

Selection Criteria

- 5 years minimum experience in data architecture, solution design, technical Business Analyst or similar role
- Ability to collect and translate design and business logic requirements into technical solutions across backend, APIs, UIs, workflows and data integrations
- Ability to design solutions that are reliable and scalable and can adopt changes and new requirements without complete re-architecting
- Experience in data modelling using modelling standards such as UML 2.0, and ER Diagrams.
- Skilled communicator, who is able to explain complex concepts relating to their work to both technical and non-technical audiences, through a mix of both verbal and written communication.
- Implementation and design of data pipelines.
- Experience in data analysis, experimentation and process improvement
- Highly engaged and team-orientated, focused on building novel solutions and addressing important biological and medical problems through tight collaboration with team members from a diverse range of backgrounds.

Desirable

- Experience with health research studies and participant recruitment
- Experience working with pathology labs
- Experience with Google Cloud Platform, metadata management, and Python

Conditions of Employment

- Working with Children & National Police Clearance (if appointed) in compliance with the Victorian Governments Child Safety Standards
- The right to reside and work in Australia and you meeting any applicable visa conditions

Health, Safety & Wellbeing

- We are committed to providing and maintaining a working environment which protects the health, safety and wellbeing of our people, partners and the community.
- Employees conducting duties on behalf of MCRI are expected to meet the environment, health and wellbeing requirements and responsibilities specifically required for the role.
- We are committed to supporting children in their right to be safe and adhere to the responsibilities we have to ensure their protection and safety as per the Child Safety Standards Policy.
- Specified positions may be subject to medical review to ensure that the inherent requirements of the role can be undertaken safely.

As MCRI evolves to meet its changing strategic and operational needs and objectives, so will the roles required of its employees. As such, this document is not intended to represent the position which the occupant will perform in perpetuity. This position description is intended to provide an overall view of the incumbent's role as at the date of this statement.