JOB DESCRIPTION
TELETHON KIDS INSTITUTE

Why is this Job Description being written?	☒ New Position ☐ Replacement Position ☐ Position re-designed ☐ Position not previously described		
POSITION DETAILS:	**Position Title:**	**POSTDOCTORAL RESEARCHER IN COMPUTATIONAL SYSTEMS BIOLOGY**	
Research Focus Area:	Early Environment	**Team:**	Personalised Medicine
Position reports to: (role)	Head, Centre for Personalized Medicine and Senior Research Scientist Personalized Medicine		
Location: *include all possible locations*	100 Roberts Road Subiaco		

POSITION PURPOSE: In one or two sentences briefly summarise the overall purpose of this role, i.e. broadly, **what** this role does and **why**

The laboratories of Dr Anthony Bosco and Dr Parwinder Kaur have a joint opening for a postdoctoral position in computational systems biology. The position is part of a larger effort to establish a competitive personalised medicine program at the Telethon Kids Institute.

This role will primarily involve developing bioinformatics tools and pipelines for NGS data management, analysis and visualisation. State of the art computational approaches using high performance computing infrastructure will be employed for multi-omics data analysis, data integration, network inference, and personalised risk stratification. A strong focus of this position will be to identify the molecular states that underpin phenotypic states, and make predictions about actionable possibilities to push biological systems between opposing molecular states in a directed manner. A broad range of multi-omics data sets will be available for analysis, including Hi-C, whole genomic sequencing, whole exome sequencing, epigenetic profiles, transcriptomics, single cell transcriptomics, metabolomics, and microbiome data. Data will be generated from diverse experimental settings, including experimental human, mouse, and rat models, birth cohort studies, human clinical trials, and experimental perturbations. The position represents an exciting opportunity to work at the intersection of basic science and clinical practice. The successful candidate will have the unique opportunity to be part of a multidisciplinary team comprised of biologists, molecular biologists, clinicians, statisticians, mathematicians, and computational biologists.

KEY RESPONSIBILITY AREAS ***(Please list in order of importance)***

Key Position Accountabilities What are the main areas for which the position is accountable	***% of Total Role***	***Inputs:*** What are the key activities or tasks to be carried out?	***Outputs:*** What are the expected end results?	***Measures:*** How it is measured
Developing integrated omics capacity and output	70	• Collaborates closely with internal and external researchers relevant to the genomic/omics filed to analyse and manage complex datasets aimed at improving child health across a broad range of areas. This includes preparation of manuscripts for publication as required • Develops new, or deploys existing, bioinformatics tools, pipelines and programs to increase efficiency and capabilities of TKI researchers to manage, analyse and visualise research data • Prepares and presents at group meetings and seminars as required • Helps to establish and revise team policies and procedures; develop and maintain appropriate data, code and software management procedures and systems (eg source code management, backups and version control, archiving)	• Completed projects, contributions to manuscripts • new bioinformatics tools/programs are setup and utilised on the bioinformatics systems • Presentations at seminars / meetings and contributing to presentations by others. • Development of new policies (or refinement) and processes for data and software management	• Number of new collaborations, manuscript contributions and projects completed. Costs recovered where appropriate • Number of new bioinformatics tools/programs setup or developed. Number of projects they are utilised in • Number of presentations • Number of changes or new initiatives to improve data and software management

Training and supervision	10	• Assists with training and guiding research staff to enable researchers to access and utilise the bioinformatics computational platform in order to approach the analysis of comple data sets	• Presentations, workshops and individual meetings will be held to train and assist researchers in using bioinformatics programs.	• Increase in the number of researchers using the platform and/or increase in efficiency or effectiveness of platform use
Professional Development	10	• Maintains up-to-date knowledge and skills of new technologies and techniques in bioformatics (and related) through collaboration, participation in workshops and conferences and other similar opportunities • Contribute positively to Telethon Kids Institute and broader environment, through participation in committees, working groups etc, as needed or requested	• Ongoing professional advancement (as measured across a range of areas)	• Measured by regular meetings with supervisor • Number of contributions

Promote a culture of data science excellence	10	• Works closely with Researchers to help promote the use of bioinformatics and appropriate engagement with bioinformatics staff • Collaborates and integrates closely with researchers to drive a culture of excellence in research data science	• Researchers are more likely to approach bioinformatics staff for assistance. • Increased awareness of the issues surrounding the analysis and management research data	• Feedback from internal clients. • Increase in awareness/utilisation of tools/techniques for effectively managing and analysing research data (eg as measured by use of technologies, procedures etc).

ESSENTIAL SKILLS, KNOWLEDGE AND EXPERIENCE (SELECTION CRITERIA):	
Qualifications: what are the minimum educational, technical or professional qualifications required to competently perform role	• A PhD in a relevant subject area (e.g. Computational Biology, Computer Science, Statistics or Mathematics) and a background in programming and command line UNIX/ Linux
Skills, Knowledge & Experience:	• A PhD in a relevant subject area (e.g. Computational Biology, Computer Science, Statistics or Mathematics) and a background in programming and command line UNIX/ Linux • Experience in the analysis of next generation sequencing data • At least one publication • Ability to work independently and as part of a team • Espouse the following traits: creative, ambitious, enthusiastic, self-motivated, proactive, passionate, reliable, hard-working, • Excellent verbal and non-verbal communication skills.

DESIRABLE SKILLS, KNOWLEDGE AND EXPERIENCE (SELECTION CRITERIA):			
Qualifications: what are the desired minimum educational, technical or professional qualifications required to competently perform role	A post-graduate qualification in biology, computer science, computational biology, bioinformatics (or related area)		
Skills, Knowledge & Experience:	• Experience with supercomputing clusters would be advantageous		
SCOPE:			
Financial accountability: Does this role have accountability for a budget?			
• No			
People responsibility: Does this role have any direct reports or indirect reports (through direct reports)?			
No. of direct reports	0	No. of indirect reports	0

ORGANISATIONAL CHART: (please complete using position titles or insert diagram below)

Next level of supervision	Research Focus Area Head, Early Environment
Immediate level of supervision	Head, Centre for Personalised Medicine
Other roles reporting to immediate supervisor	Postdoctoral Researcher in Computational Systems Biology

ADDITIONAL INFORMATION: is there any additional information that needs to be understood to explain this role?