POSITION DESCRIPTION

Senior Research Officer (Bioinformatics)

Faculty/Division	Medicine & Health
Classification Level	Professional 8
Hours & Span (Category)	G - Administrative, Clerical, Computing, Professional & Research Staff
Position number	Click or tap here to enter text.
Shiftwork status	NOT SHIFTWORKER
Allowances	Nil
On call arrangements	Nil
Original document creation	8 July 2024

Position Summary

The **Senior Research Officer** plays a key role in the research group to understand the molecular underpinnings of inherited sarcoma susceptibility. The largest collection of germline whole genomes and healthy controls have been developed by the lab. Using this unique dataset, the Senior Research Officer will lead and contribute bioinformatics and statistical analysis with a primary focus on statistical fine-mapping and functional bioinformatics to discover novel genetic variants.

The role will join a small, dedicated team who reports to the Professor and has no direct reports.

Accountabilities

Specific accountabilities for this role include:

- Oversee and manage the general germline bioinformatics program.

- Perform data collection, management and analysis.

- Lead and make strategic contribution to statistical analyse one of the largest population scale rare cancer whole-genome dataset to determine common and rare variants using case-control studies.

- Annotate in germline variants using publicly available databases.

- Design, develop, implement and manage computational infrastructures and pipelines to process and analyse high-throughput whole-genome and targeted genome sequencing data.

- Responsible for the creation and execution of pipelines compatible with both internal and external high-performance computing resources, including National Computing Infrastructure, Australia and UNSW HPC.

- Make strategic contributions to managing and curating existing and new sequencing cohorts including Hartwig and UK Biobank datasets.

- Develop and prepare applications for access to external databases.

- Ensure a secure and efficient delivery of data and results to collaborators and clients.

- Consult, liaise and develop strong relationships with researchers to assist in genomic data analysis.

- Maintain and manage meticulous records of computational analyses and methodologies for all project within the Centre.

- Align with and actively demonstrate the UNSW Code of Conduct and Values

- Cooperate with all health and safety policy and procedures of the University and take all reasonable care to ensure your actions or omissions do not impact on the health and safety of yourself and others.

Skills and Experience

- A degree in Bioinformatics, Computational Biology, Computer Science or Engineering.

- Highly developed and a minimum of five years of experience in the analysis of population-scale whole genome/transcriptomics datasets using open-source libraries such as GATK and Hail.

- Experience in statistical analysis of population genomics in human disease including common and rare variants.

- A strong publication record.

- Track record in managing multiple internal and external collaborations.

- Demonstrated experience and understanding in FASTQ processing, quality controls and joint-calling of the BAM files.

- Strong skills in Linux command line and scripting languages (Python, Bash, R or other).

- Demonstrated experience in the development and implementation of new and cutting-edge bioinformatics tools and pipelines.

- Experience with source code management tools (git preferred).

- Experience in deploying and running pipelines using high performance computers (HPC) and job schedulers (e.g. PBS pro or SGE).

- Experience in containerisation using Docker and/or Singularity.

- Demonstrated ability to work collaboratively and productively within a team, but also to take initiative and work independently while managing competing demands.

- Demonstrated experience in training, mentoring and supporting research staff and students.

- Demonstrated experience in drafting ethics applications (human and/or animal), GMO/NLRD protocols, and in diligent and accurate reporting to panels/committees overseeing research.

- Excellent written and verbal communication skills, with a high level of attention to detail for deliverables produced. Proven ability to influence senior management and stakeholders as appropriate to ensure successful outcomes.

- Excellent time management skills, with a demonstrated ability to respond to changing priorities, manage multiple tasks and meet competing deadlines by using judgement and initiative.

- An understanding of and commitment to UNSW's aims, objectives and values in action, together with relevant policies and guidelines.

- Knowledge of health and safety responsibilities and commitment to attending relevant health and safety training.

Skills and Experience

- Verification of qualifications.

About this document

This Position Description outlines the objectives, desired outcomes, key responsibilities, accountabilities, required skills, experience and desired behaviours required to successfully perform the role.

This template is not intended to limit the scope or accountabilities of the position. Characteristics of the position may be altered in accordance with the changing requirements of the role.