Position Description

NAME:	**Incumbent**
JOB TITLE:	**Bioinformatician**
DEPARTMENT:	**Translational Tumour Biology & Bioinformatics**
DIVISION:	**Personalised Medicine (PM)**
REPORTS TO:	**PM Senior Scientist & Senior Bioinformatician**
LAST DATE REVIEWED:	**18 August 2020**

JOB SUMMARY

Every year in Australia there are around 950 new children diagnosed with cancer. To improve the outcomes of children with cancer, the Children's Cancer Institute (CCI) initiated the Zero Childhood Cancer national personalised medicine trial (PRISM). This trial aims to match patients to the optimal treatment guided by molecular tumour profiling, high-throughput *in vitro* drug testing on patient-derived model systems and *in vivo* drug validation in patient-derived xenograft models. The Bioinformatics group at CCI plays a crucial role in unravelling and understanding the molecular basis and drivers of a child's tumour and is essential for the integrative analyses to link molecular profiling data to *in vitro* generated drug efficacy data for drug hit calling and prioritisation for individual PRISM patients and the identification of novel biomarker-drug efficacy associations for future patients.

As a key partner of the Zero Childhood Cancer program, the Translational Tumour Biology (TTB) group at CCI is deeply involved in the molecular profiling and drug analysis of the program and focusses on further understanding how altered genes drive cancer and on how to translate this knowledge into new clinically applicable treatment interventions. The TTB group believes that understanding the molecular mechanisms used by cancer driver genes is the key to more effective therapies with reduced toxicity.

Currently, we are looking for a strong and creative programmer with an eye for detail and a passion for biological research to

(1) Analyse high-throughput drug screening data within the PRISM trial
(2) Develop an integrative data analyses platform for dynamic correlations between *in vitro* drug efficacy data and molecular profiling data
(3) Support related research projects within the Translational Tumour Biology group
(4) Perform benchmarking analysis of software and develop and optimise key pipelines
(5) Contribute to the bioinformatics education of other researchers.

The bioinformatician will be embedded within the Translational Tumour Biology research group, while strongly interacting with and being fully supported by the Bioinformatics group. This unique position not only offers the opportunity for the candidate to develop new analysis approaches and make new informatic discoveries, but also to create own research questions.

PRIMARY TASKS / RESPONSIBILITIES

- Develop and optimize algorithms to analyse, visualise and summarise *in vitro* drug efficacy data generated within the national PRISM trial to support drug curation meetings in which drug screening results are shared and discussed with treating clinicians and other team members involved
- Develop an integrative data analyses platform for dynamic correlations between *in vitro* drug efficacy data and molecular profiling data
- Develop and implement algorithms using omics data and *in vitro* efficacy data to predict effective drug combinations
- Support spin-off research projects resulting from the precision medicine program
- Support research projects and grant administrative activities of the Translational Tumour Biology group
- Statistical analysis for clinical and bench-side research
- Assess, understand and implement bioinformatics tools and generate bioinformatics pipelines
- Teach, assist and mentor scientists in the field of bioinformatics
- Any other tasks required by the team leader or delegated senior team members

MINIMUM REQUIREMENTS

Qualifications

- Minimum BSc in either Bioinformatics, Biology, Molecular Biology, Computer Science or Statistics

Experience and requirements

- Strong expertise in at least one of the following areas:
    - Bioinformatics
    - Computer Science
    - Programming
- Expertise in at least two of bash, R, python, or perl is essential
- Expertise in at least one of the following areas is desirable:
    - Genomics
    - Genetics
    - Next generation sequencing
    - Cancer-, cell- or molecular biology
- Expertise in the interpretation of *in vitro* drug testing data is desirable, but not essential
- Highly motivated, creative and empathetic is essential
- Strong abilities in problem-solving and independent thinking

KEY SKILLS

- Demonstrates initiative and creativity
- High-level technical computer skills
- Highly developed interpersonal skills
- Excellent listening, verbal, and written communication skills

- Ability to quickly respond to situations as they arise
- Excellent attention to detail
- Ability to work independently and as part of a team as necessary
- Strong analytical, critical thinking and problem-solving skills
- Ability to work cooperatively, openly and transparently
- Flexible attitude to work and ability to work to deadlines
- Ability to maintain confidential information

EXPECTED OUTPUTS

- Improved translation of *in vitro* drug efficacy data into clinically relevant personalised treatment recommendations
- An integrative data analyses platform for dynamic correlations between *in vitro* drug efficacy data and molecular profiling data
- Novel biomarker-drug efficacy associations
- Drug combinations to guide future clinical trials
- Reproducible and high-quality research results generated whilst adhering to project milestones and deadlines
- High-impact publications

Children's Cancer Institute policies applicable

- Code of Conduct/Ethics
- Whistle-blowing
- Use of Electronic Resources
- Workplace Health & Safety
- Appropriate Workplace Behaviour
- Privacy
- Any other policies not listed here but are available on the Children's Cancer Institute Intranet Policies pages

SERVICE STANDARDS AND GENERAL EXPECTATIONS

- Respond to phone calls and emails within 48 hours
- Read internal communications within 48 hours
- Maintain up to date personal information in the HRIS (ConnX - Self Service) at all times

OUR VALUES

A is for **Accountability** and **Integrity**

C is for **Camaraderie**, **teamwork** and **Sharing**

E is for **Excellence** and **Success**

S is for **Satisfaction. The result of living our values everyday**

COMPLIANCE AND CODE OF ETHICS AND CONDUCT

Staff members are responsible for ensuring that they are familiar with and comply with their conditions of employment as stated in their individual contract, all Children's Cancer Institute Policies and Procedures and relevant ethical and regulatory guidelines. Staff must be aware that breaches by individuals will not be tolerated or condoned and may be subject to the Disciplinary Action Policy.

Your knowledge and awareness of Children's Cancer Institute Policies and Procedures (including the Code of Ethics and Conduct), will be monitored from time to time to ensure that our compliance program is effective.

Part of compliance adherence involves the use of standardised forms, checklists, and other aids (as appropriate) to ensure that important compliance issues are not overlooked. All forms must be used in accordance with instructions and the procedures as outlined in the relevant policies and procedures to ensure that compliance to the laws and regulations occurs.

WORK HEALTH & SAFETY

- Must adhere to all WHS policies and procedures including reporting incidents within 24 hours
- Take reasonable care for their own health and safety and the health and safety of other people who may be affected by their conduct in the workplace
- Actively participating in health and safety meeting, training and induction programs
- Complying with all safe work procedures and instructions
- Use equipment in compliance with relevant procedures, without wilful interference or misuse
- Ensure that any hazardous conditions, near misses and injuries are reported immediately to the supervisor and in the WHS reporting system (Myosh)
- Must not wilfully or recklessly interfere with or misuse anything provided in the interest of environment health and safety or welfare

REPORTING STRUCTURE

Position reports direct to: PM Senior Scientist and Senior Bioinformatician

Departmental Structure: See Organisation Chart

Note: *Reporting structure may change subject to management decisions and business requirements.*