

Junior Bioinformatics Analyst – 16 January 2017

The Centre for Proteomic and Genomic Research (CPGR) is seeking to employ a junior bioinformatics analyst to assist the organization in executing a comprehensive study design, data analysis and interpretation work package in a genome wide association study (GWAS) funded by the National Cancer Institute (NCI). The project, known as MADCaP (Men of African Descent and Cancer of the Prostate), is formally led by Harvard TH Chan School of Public Health & Dana-Farber Cancer Institute Professor Tim Rebbeck (USA), and includes scientists at the CPGR, Stellenbosch University (SA), the National Cancer Registry at the National Health Laboratory Services (NHLS) (SA), and several centres in Senegal, Nigeria and Ghana.

MADCaP aims to identify African-specific alleles to elucidate the aetiology of Cancer of the Prostate (CaP) with respect to risk and disease aggressiveness through utilizing current knowledge and conducting a GWAS with samples collected in South Africa, Senegal, Nigeria and Ghana. The genotyping effort will be performed on an Affymetrix GeneTitan™ platform using a custom purpose-designed high-density SNP genotyping array (interrogating 675,000 to 1.3 million genotyping markers at a time).

The successful candidate will be involved in key aspects of the project, including experimental design, array design, data analysis, and report writing. You will have the opportunity to work with and receive training in advanced bioinformatics and statistical software packages as well as in the design, development and utilization of GWAS data analysis pipelines.

The individual will be expected to be highly motivated and work within a team environment interacting with CPGR staff, consortium members, external scientists, and technology providers. Where applicable, the successful candidate will have exposure to identify and develop opportunities and applications in support of the CPGR's Genomic Medicine program!

This application is for a 1-year contractual position, situated in Cape Town, South Africa with the potential to renew.

Job duties include but are not limited to

- Understand biostatistical and bioinformatic aspects of the MADCaP project
- Assist with coordinating design, implementation and utilization of custom SNP genotyping arrays
- Developing and implementing standardized protocols for analyzing data aimed at the development and validation of genetic markers generated in the project
- Understanding and ensuring compliance with genomic data reporting standards, in particular underlying the development and validation of biomarkers in drug and diagnostic test development
- Assisting with development, validation and documentation of bioinformatics pipelines in an ISO 9001:2008 or ISO 17015 compliant manner
- Performing statistical analysis of genomic data, including tools for pathway analysis and systems biological interpretation of data

Requirements

- MSc in Bioinformatics, Computational Biology or Computer Science or related field
- Practical experience in analyzing and interpreting SNP genotyping data-sets
- Strong biological background in biochemistry, chemistry, molecular biology, genetics, or a related discipline
- Experience with Linux and shell programming
- Outstanding written and verbal communication skills
- Understanding of biomarker development and related data interpretation
- Working experience in Python, R, Perl Php, MySQL, Java and statistical packages is a plus
- Practical knowledge of quality management systems, such as ISO 9001:2008, ISO 15189, ISO 17025 and GLP is an advantage
- Employment equity goals will be taken into account in the recruitment process

About the CPGR

The CPGR is one of Africa's first fully integrated 'omics' service provider, built to leapfrog South Africa's ability to conduct information-rich biomedical research onto a globally competitive level. Amongst others, the organization offers the following 'omics' capacity: Next-Generation Sequencing: NextSeq500 (1x), MiSeq (1x), IonTorrent PGM (2x), IonProton (1x), for high-performance sequencing projects; Microarrays: Affymetrix GS 3000 and Affymetrix GeneTitan for genotyping and gene-expression analysis; Mass spectrometry: ABI 4800 MALDI-ToF/ToF and Thermo Q Exactive for MS-Proteomics; High-throughput PCR: ABI 7900 for qRT-PCR applications; Automated DNA/RNA QC, library handling and sample processing; dedicated IT infrastructure and bioinformatic applications for data analysis and interpretation.

The CPGR is a non-profit company based in Cape Town, South Africa, and based on an initiative by the Department of Science and Technology (DST), and financially supported by the Technology Innovation Agency (TIA), to boost the development of a bio-economy in South Africa. The CPGR combines state-of-the-art information rich genomic and proteomic ('omics') technologies with bio-computational pipelines to create unique solutions in the human health and the agri-biotech sectors. The CPGR has adopted a certified ISO 9001:2008 quality management system and is a BEE Level 2 contributor to economic transformation in South Africa. Information about the CPGR can be obtained at www.cpgr.org.za and www.cpgr.org.za/blogspot

Procedure

Interested candidates should submit a short cover letter and C.V. together with the names and contact details of two referees to info@cpgr.org.za by **27 January 2017**.