

SILENT GENOMES PROJECT – BIOINFORMATICS TEAM
Bioinformatics Programmer/Specialist

Silent Genomes: Reducing health-care disparities and improving diagnostic success for Indigenous children with genetic disease. Silent Genomes is a Genome Canada/CIHR funded 4-year project which has 4 key activities:

- Activity 1: the core of the project, integrates Indigenous-led governance, community engagement, community education, and student capacity building throughout the entire project;
- Activity 2: Precision diagnosis of children with genetic disease;
- Activity 3: Development of an Indigenous background variant library; and
- Activity 4: Economics of precision diagnosis for Indigenous children.

The project includes an international Indigenous Advisory Board, a pan-Canadian team of clinicians and genetic counsellors, local bioinformaticians, clinicians and scientists with the collective goal to improve access and effectiveness of genetic diagnosis for Indigenous children and their families.

Activity 3 within the Silent Genomes project is focused on the envisioning and implementation of a secure data storage and access system for genetic sequence data that will be shaped, and approved by the Indigenous communities participating in the Silent Genomes governance process. During the early stages of the project, the Bioinformatics Team, based on the campus of BC Children's Hospital, will work on prototype model systems that can enable rich discussion of options, and be dynamically revised in response to the guidance and feedback of the partners. In short, the bioinformatics team needs to be able to imagine and implement diverse approaches to the secure storage and Indigenous-controlled access of genetic (DNA) data.

The Activity 3 bioinformatics team has openings for scientists.

The Silent Genomes project is strongly committed to hiring practices that value diversity and preference may be given to applicants who self-identify as Indigenous with the required combination of education and experience.

All qualified candidates are encouraged to apply; however, Canadians and permanent residents will be given priority.

The Silent Genomes project is funded until mid-2022, and it is hoped that members of the team will stay on until the project concludes.

There is an opportunity for a computer programmer with experience in the storage and processing of confidential information to join the Silent Genomes bioinformatics team. This individual will have an undergraduate or graduate degree in a quantitative science, with at least 2 years of experience implementing SQL database systems using C++, Java or Python. Experience working with bioinformatics or DNA sequence data is highly preferred. Experience in rapid prototyping is a strong benefit.

ORGANIZATIONAL STATUS

The Bioinformatics Programmer/Specialist reports to the Principal Investigator (Dr. Wasserman), but will work closely with post-doctoral scientists in the team.

WORK PERFORMED

- Collaborates with the Activity 3 team to determine programming needs and approaches
- Designs programming logic
- Defines documentation procedures and prepares programmatic documentation in accordance with standards agreed upon with supervisor
- Programs improvements to an existing software implementation
- Improves performance efficiency by optimizing software

CONSEQUENCE OF ERROR

The decisions and actions taken by the software developer have a direct impact on the progress of the project and the ability of the team to meet funding deadlines. Errors in judgment, poor analysis or ineffective solution implementation will adversely impact the ability of the lab to meet targets and expectations of businesses and funding partners involved in the project. Further, insecure systems risk exposing highly sensitive user personal and activity information and could cost the University significant amounts in fines and reputation damage.

SUPERVISION RECEIVED

Work is carried out under the supervision of the Principal Investigator, but will work closely with the Silent Genomes Project Activity 3 team.

SUPERVISION GIVEN

Potentially will oversee the work of undergraduate/work-learn students.

QUALIFICATIONS

- An undergraduate degree in Bioinformatics, Computer Science, Computer Engineering or another relevant discipline
- Minimum of three years of experience or the equivalent combination of education and experience
- Superb programming skills using a variety of languages, especially Python. Knowledge of optimization techniques
- Experience developing web-based interfaces using Django
- At least 2 years of experience with SQL/MongoDB database systems
- Working knowledge of commercial cloud services (e.g. Amazon Web Services) is an advantage
- Familiarity with the Ruby on Rails framework
- Experience developing web APIs
- Experience working in software or hardware development projects with multiple sub-teams
- Experience working with human genome sequencing data is preferred
- Willingness to learn about genetics
- Ability to communicate effectively verbally and in writing
- Ability to work effectively independently and in a team environment
- Strong organizational skills, meticulous attention to detail

HOW TO APPLY

Please email your cover letter and resume to wyeth@cmmt.ubc.ca. Due to the number of resumes we receive, we are unable to confirm receipt of submissions over the phone, or provide the status of competitions except to those who are selected for an interview.

Equity and diversity are essential to academic excellence. An open and diverse community fosters the inclusion of voices that have been underrepresented or discouraged. We encourage applications from

members of groups that have been marginalized on any grounds enumerated under the B.C. Human Rights Code, including sex, sexual orientation, gender identity or expression, racialization, disability, political belief, religion, marital or family status, age, and/or status as a First Nation, Metis, Inuit, or Indigenous person.