



# CHÉOS

Centre for Health Evaluation  
& Outcome Sciences

St. Paul's Hospital  
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<b>Job title:</b>	Mathematical Modeler
<b>Department:</b>	Centre for Health Evaluation and Outcome Sciences (CHÉOS) at the Providence Research
<b>Location:</b>	St. Paul's Hospital, Vancouver, BC
<b>Salary:</b>	Salary will be in accord with experience; plus a competitive benefits package including four weeks of paid vacation to start, extended health and dental plans, and membership in the Municipal Pension Plan
<b>Desired Start Date:</b>	As soon as possible
<b>Full/Part-time:</b>	Full-time (37.5 hours/week)
<b>Term:</b>	The initial term of this role has funding for at least 1 year in duration and is renewable, should grant funding continue to be available
<b>Application Closing Date:</b>	Open until filled
<b>How to Apply:</b>	Interested candidates should email their resume and cover letter to <a href="mailto:hr@cheos.ubc.ca">hr@cheos.ubc.ca</a>

*Equity and diversity are essential to research and 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 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 a person who identifies as First Nation, Metis, Inuit, or Indigenous. CHÉOS welcomes a broad range of applicants and accommodations are available for candidates taking part in all aspects of the selection process.*

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## Who We Are

Bridging the gap between data, research, and care, [CHÉOS](#) is a collaboration between cross-disciplinary scientists and expert research staff evaluating the effectiveness of health interventions at the population level. From assessing the cost-effectiveness of a new drug or treatment option to informing policy decisions that change how care is delivered, CHÉOS and the CTN seek to improve health outcomes for all.

## Our Commitments to You

At CHÉOS, we are committed to providing an inclusive, dynamic, and cooperative work environment in which all members are encouraged to pursue personal and professional growth. We offer a competitive salary, and excellent benefits, including:

- A minimum of 4 weeks of paid vacation annually (prorated for part-time staff)
- Paid time off between the December and January statutory holidays
- Other paid leaves to support health, wellness, and work-life balance
- Extended health and dental plans
- Membership in the Municipal Pension Plan with employer-matched contributions

## The Role

Under the supervision of Dr. Bohdan Nosyk, the Mathematical Modeler will assist the team lead and other team members in simulation modeling health research projects. Specific tasks include model specification, development and validation, preparation of manuscripts, presenting research findings at conferences, and other research-related activities. Dr. Nosyk leads a multidisciplinary team of statisticians, health economists and public health researchers engaged in an international portfolio of leading-edge health economic and health services research projects focused on HIV/AIDS and substance use disorders. This team offers outstanding research opportunities, international collaborations, access to world-class linked administrative databases, a breadth of methodological skills, and a focus on improving health outcomes for marginalized populations. This position additionally offers potential for publication and other professional development opportunities.

The successful applicant will have the opportunity to be involved in a wide range of high-impact studies evaluating local and international programs and policies in [opioid use disorder treatment](#) and [risk mitigation](#), in addition to [HIV/AIDS treatment and prevention strategies](#) which promote health equity and support the 'Ending the HIV Epidemic in America' initiative.

## Work Performed

- Responsibilities span the entire modeling life cycle, including model specification, design, development, debugging, validation, implementation, documentation, code maintenance, and conduct of simulations to advance project objectives in the context of substance use and HIV/AIDS.
- Develops, tests, and implements new models to advance project objectives.
- Performs parameter estimation using empirical data.
- Conducts one-way and probabilistic sensitivity analysis.
- Analyzes model results and determines a course of action to resolve performance issues and model discrepancies.
- Achieves a high level of research productivity, including contributing to securing grant funding, and developing an independent research agenda.
- Supports and leads the development of research proposals and grant applications.
- Prepares manuscripts communicating project methods, results, and conclusions, and presents research at national and international conferences.
- There will be opportunities for the successful candidate to receive additional training in a wide range of research methods, including health economic evaluation, while contributing substantially to the development and execution of cutting-edge health economic research.

## **Skills and Qualifications**

- Applicants should have a Master's or PhD in applied mathematics or a related quantitative discipline. PhD is an asset
- Demonstrated experience designing testable mathematical models, simulation modeling, machine learning, parameter estimation
- Strong quantitative skills and familiarity with cutting-edge statistical methods for parameter estimation
- Ability to specify, design, develop, implement, and support projects that focus on simulation modeling
- Strong background in computational methods, including applications using differential equations
- Prior mathematical modeling experience in a health-related field would be an asset but is not essential
- High proficiency in Microsoft Office, including Word, Excel, and PowerPoint
- Strong quantitative skills (experience and proficiency using R, Python, SAS, STATA or similar software package)
- Strong presentation skills (written communication and presentation of data)
- Theoretical knowledge in Epidemiology, Public Health, or related field
- Database management and graphics capabilities

## **Covid-19 Vaccine Mandate**

This position is located within a healthcare facility. Therefore, this position requires successful verification of full vaccination against Covid-19 provided prior to the start date, as required by the provincial health mandate.