

Post-doctoral fellowship

CHU Sainte-Justine Research Center

Principal Investigator	Cristina Longo, PhD
Project duration	2 years
Start date	February, 2022

Research Environment

Cristina Longo, PhD, is a pediatric epidemiologist, assistant professor at the University of Montreal, and investigator at the CHU Sainte-Justine Research Center. The overarching goal of her research program is to bridge the gap between epidemiological methods, big data, and the clinic to optimize asthma outcomes in children through precision medicine and technology-enhanced care. Her research involves two themes. The first focuses on identifying causal factors that contribute to the development and progression of childhood asthma using cutting-edge statistical methods adapted to high-dimensional data settings. The second involves applying machine learning methods to complex biological and digital data to assess their clinical utility for optimizing asthma outcomes in children. Her lab is located at the CHU Sainte-Justine Research Center and she is affiliated with the Faculty of Pharmacy at Université de Montréal where she is a member of the Drug and Population Health Research Axis.

Research project description

The Treating Asthma by Integrating Learning algorithms with Omics Research: **Moving toward Automated High-Dimensional Endotyping (TAILOR-MADE)** in children project aims to discover molecular mechanisms from high-dimensional multi-omics and clinical data that can accurately predict response to treatment among preschoolers and children with wheeze and asthma. To address the aim of the TAILOR-MADE project, **Dr. Longo is seeking a postdoctoral fellow who is motivated to learn and/or apply machine learning methods to health data.** The successful candidate will work alongside world renowned experts in respiratory medicine as well as collaborate with the European-wide U-BIOPRED consortium. International collaborations with Amsterdam University Medical Center and Imperial College of London are envisioned.

In addition to the above, the successful candidate will have the following responsibilities:

- Coordinate meetings with local and international collaborators
- Develop and implement data harmonization, cleaning, management, and analysis protocols
- Design and perform studies
- Aid in supervising graduate students for ancillary projects
- Uphold scientific integrity
- Publish work in high impact journals, present work at both national and local meetings
- Conduct systematic reviews (if needed)
- Prepare manuscripts
- Assist in grant proposal writing

Required training and profile

The successful candidate must have:

- Academic requirements: PhD or equivalent degree in epidemiology, biostatistics, computer science, bioinformatics, or a related discipline
- Language requirements: English, French an asset



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- SAS or R programming experience is **mandatory**, Python an asset.
- Strong organizational skills
- Team player
- Scientific rigour

Conditions of fellowship

Status: Temporary, full-time (35-hours work/week, 1 year, renewable)

Pay Scale: Research Center of the CHU Sainte-Justine standards

Work Shift: from 9 a.m. to 5 p.m., Mondays to Fridays

Work Site: CHU Sainte-Justine (3175, Côte-Sainte-Catherine, Montréal, Québec H3T 1C5)

Submit your application

Candidates must apply before **February 1st, 2022**. Interested candidates must submit the following documentation to Dr Cristina Longo at cristina.longo.1@umontreal.ca

- ✓ Curriculum vitae
- ✓ Official transcripts
- ✓ Cover letter
- ✓ Name and contact information of three (3) references

Cristina Longo, PhD

Research Center of the CHU Sainte Justine

3175, Côte Sainte-Catherine Street, Office B.17.102

Montréal (Québec, Canada) H3T 1C5

How is it like to study or make a fellowship at the CHU Sainte-Justine Research Center?

Pursue your [graduate or postdoctoral studies](#) at the CHU Sainte-Justine Research Center, and be one of the 385 students, fellows and interns who are helping to fast track the development of knowledge in the field of mother, child and adolescent health. Under the supervision of prominent scientists, especially in leukemia, rare pediatric diseases, genetics, perinatology, obesity, neuropsychology and cognition, scoliosis and rehabilitation, you will have the opportunity to work with multidisciplinary scientific teams and collaborators from all over the world.

About the CHU Sainte-Justine Research Center

CHU Sainte-Justine Research Center is a leading mother-child research institution affiliated with Université de Montréal. It brings together more than 200 research investigators, including over 90 clinician-scientists, as well as 385 graduate and postgraduate students focused on finding innovative prevention means, faster and less invasive treatments, as well as personalized approaches to medicine. The Center is part of CHU Sainte-Justine, which is the largest mother-child center in Canada and second most important pediatric center in North America. More on research.chusj.org

The City

Celebrating its 375th anniversary in 2017, Montreal is the second most populous municipality in Canada, and the largest in the Province of Quebec. Montreal is the most bilingual city in Canada, and the second-largest French speaking city in the world, after Paris. The Greater Montreal boasts the highest number of University Student per capita among all metropolitan areas in North America, and Quacquerelli Symond (QS) ranked Montreal as the World's Best City to Study Abroad in their 2017 Best Student Cities ranking. The city enjoys a continental climate, with four distinct seasons: from warm-to-hot summer days, to cold, snowy winter days. A cultural hub, Montreal hosts among the most internationally known festivals and events, such as the Canadian Grand Prix of Formula One, the Montreal International Jazz Festival, the Francophonies, the International Firework Competition of Montreal, and the Just for Laughs Festival.



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