

# POSTDOCTORAL OPPORTUNITY

- Topic:** Stochastic Modeling, Simulation, and Optimization  
for Telephone Call Centers
- Where:** DIRO, Université de Montréal, Canada
- Start:** Late 2011 or early 2012
- Duration:** Minimum one year, renewable for a second year

A postdoctoral fellowship is available to participate in a project on the modeling, simulation, and optimization of telephone call centers, with special emphasis on Hydro-Québec's call centers. The research is performed in the Laboratory of the Canada Research Chair in Stochastic Simulation and Optimization, at DIRO (Département d'Informatique et de Recherche Opérationnelle), Université de Montréal, and is done in collaboration with Hydro-Québec.

Call centers employ several million people in North America. They operate in stochastic and non-stationary environments. Their management is complex and constitutes fertile ground for the application of operations research. The aim of this project is to develop stochastic models and optimization algorithms for the management of multi-skill call centers. In these centers, different types of calls are handled by employees having different skills. Managerial decisions include constructing work schedules for the employees, defining routing rules for the different call types, updating these schedules and rules when the incoming traffic differs too much from the forecasts, etc. Because of the complexity of realistic models, decision rules must be optimized via simulation-based methods.

The project involves stochastic modeling based on information and statistical data provided by Hydro-Québec. A solid knowledge of statistics, stochastic modeling, and optimization, as well as some programming abilities in Java or a similar language, are essential. Familiarity with modern statistical software such as R or SAS is highly desirable. Ability to read and understand French would be a valuable asset.

This project is funded jointly by Hydro-Québec and the Natural Sciences and Engineering Research Council of Canada (NSERC). The level of financial support will depend on the qualifications and the level of excellence of the candidate.

Applicants must have obtained their PhD in the last three years. They are invited to submit a full curriculum vitae, a copy of their thesis, and a copy of their two best scientific publications, all in .pdf format (only) by email to:

Pierre L'Ecuyer, professeur  
<http://www.iro.umontreal.ca/~lecuyer/>