A PhD opportunity in dendrochronology and genetics:

Influence of genetic variability on the growth and regeneration of sugar maple at its northern distribution limit

Context: The sugar maple is a dominant species of the Eastern North-American temperate forest, which is expected to migrate northward as a result of global warming. Populations at the edge of their range should therefore be the first to benefit from climate change. Genetic makeup of frontier populations, however, may affect species capacity to adapt to changing environment. Specifically, it is hypothesized that a low genetic diversity of such populations may limit ability of the species to respond to increases in the length and average temperature of the growing season.

The doctoral project will seek to assess the role of genetic makeup in the future dynamics of maple distribution range and will study regeneration and growth of frontier maple populations in Eastern Canada. For the study of maple regeneration the project will examine the variability in genetic diversity across different age cohorts within populations. For the study of tree growth, the project will rely on the analysis of growth response to climatic changes, as recorded in the tree rings, and assessments of genetic variability within frontier maple populations.

PhD student. We are looking for an ambitious and highly motivated PhD student with a completed master degree in forest ecology, climatology, geography, or ecosystem modelling. Documented experiences with dendrochronology, forest genetics, and large relational databases are strong assets during the evaluation process. The knowledge of R is a must. The candidate should be fluent in English and has a good ability to formulate himself/herself both orally and in writing. Knowledge of French and Chinese is a strong asset. A record of scientific publications is highly valued. We put a great emphasis on personal characteristics of the successful applicant, solid work ethics, and in particular the ability to independently manage a large volume of laboratory and analytical tasks and to meet reporting and publication deadlines. The candidate is expected to be physically fit and capable of conducting field work in remote yet aesthetically superior environments. It is expected that the student will spend between six to twelve months with a project partner, South China Botanical Garden of the Chinese Academy of Sciences in Guangdong.

Location. The student will be based at the Forest Research Institute of the University of Quebec at Abitibi-Temiscamingue (IRF UQAT, Rouyn-Noranda QC). The student will become a member of the Chair in Sustainable Forest Management and the Center for Forest Studies. The IRF team enjoys a highly dynamic and truly international research environment. The city of Rouyn-Noranda is very active culturally and offers a high quality of life thanks to its tourist attractions (Film Festival, Music Festival Emerging, World Guitar Festival to name a few) and a large number of outdoor activities which include hiking, camping, canoeing, skiing, and snowshoeing (http://www.ville.rouyn-noranda.qc.ca/; http://tourismerouyn-noranda.ca/).

Beginning of studies: January 2020

Funding: a fellowship of Can$ 21,000 per year for a total of three years. An internship of 6 months to 1 year in China is planned during the duration of the doctorate.

Supervision: Yves Bergeron, Igor Drobyshev (IRF UQAT) & Jianguo Huang (Chinese Academy of Sciences)

Interested candidates must apply by e-mail (yves.bergeron@uqat.ca & igor.drobyshev@uqat.ca) by sending (1) a cover letter outlining their academic background and research experience, as well as (2) a detailed CV including name and contact information of two references.