



**Fonds québécois de la recherche sur la nature
et les technologies**

Scholarship Application Guide

Building on Excellence

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Foreword

Enhancing the application process

Improving the quality of students' merit scholarship applications involves every member of Québec's academic community. A collective effort by applicants, professors and university administrators must be invested to enhance the application process.

This guide was created to help university stakeholders and natural sciences, mathematics and engineering graduate students in the preparation of their scholarship applications to federal and provincial granting agencies.

The FQRNT aims to ensure that applicants from Québec are suitably supported when preparing their applications and have the best chances of receiving a merit scholarship.

Introduction

Natural Sciences and Engineering Research Council (NSERC) 2001-2006 scholarship competition success rates show that, despite the fact that Québec's natural sciences and engineering (NSE) university registration rate is greater than the demographic weight of Canada's 15- to 24-year-olds (29% vs 23%), Québec students are under-represented among NSERC graduate applicants and scholarship holders (19%).

Tackling these numbers is a top priority for the Fonds québécois de la recherche sur la nature et les technologies (FQRNT). Because cumulating NSERC and FQRNT scholarships is prohibited, the more NSERC scholarships Québec students receive, the more scholarships the FQRNT will be able to award to excellent students who would not otherwise have received financial support.

The board of the directors of the FQRNT therefore mandated its program management officers with consulting the academic community on the issue so as to develop a good practices guide.

Section 1: Suggestions for applicants

IMPORTANT

To increase their chances of success, students should apply for as many scholarships as possible.

1.1 Preparing an application

Applicants must first ensure that they meet the eligibility and evaluation criteria set out in the rules regulating the competitions to which they are applying. Each granting agency has established its own rules and uses its own application forms. It is important to ensure that the applications are sent to the right places and that the field of study is part of the disciplines and scientific areas covered in the agency's mandate. It is critical to respect the agency's guiding principles with regards to the content of the applications' sections and mandatory support documents. Applications that do not meet agency requirements may be refused.

Therefore, applicants should not hesitate to contact the program or scholarship program director in their university.

1.1.1 The earlier, the better

The preparation process is generally long. Students must choose the people who will fill out the mandatory letters of recommendation, submit a research project that is in keeping with agency regulations before the deadline, give respondents the time to read the proposal and write their letters of recommendation, account for application transmission time, and more. Students should therefore begin preparing their applications one year in advance to optimize their chances of success. Please note that, generally, once a scholarship is granted, the scholarship holder may change his/her choice of institution, project director or project.

It is important to get key people involved in the process from the very beginning (e.g. professors, possible future research directors, etc.) and consult with the university's scholarship office, which offers applicant services. Finally, it is recommended that students attend the scholarship program information sessions held by the university in September and October.

1.1.2 Writing skills

Applications must be well-written. The applicant must pay close attention to language quality by checking spelling and text structure. Evaluation committee members may give low marks to applications that contain too many spelling or grammar errors. Applications may be submitted in French or English, and the choice of language has no bearing on the value of the application in the eyes of the evaluation committee.

Each application is assessed by an evaluation committee generally made up of university professors. Applications must be well-structured and easy to read. Applicants must absolutely avoid verbosity, repetitions and too many figures of speech. All texts should be clear.

It is best not use we, which has become antiquated, or overuse the first person (*I*). Applicants should therefore rely on the first person, the impersonal subject (e.g. It will be demonstrated that...) and the passive voice (e.g. Experiments have been conducted...). It is also best to avoid empty words such as I have always been interested in... or ...has always interested me.

In addition, applicants should avoid using overly technical language (jargon, acronyms) and ensure that the project overview is clear since evaluation committee members are not necessarily specialists in all fields and disciplines. Finally, it is strongly suggested that the research director read the justification for the application and research project overview before they are submitted.

1.1.3 Logical flow of the texts

Applicants must answer all of the questions on the form and respect the space allowed for each answer and the order of the criteria listed in the program rules.

Applicants should avoid long sentences that are difficult to read and remember that a paragraph normally contains a single idea. The text must always remain coherent and include logical transitions between ideas.

A good scholarship application is:

- Clear and contains explanations;
- Concise and contains a minimum number of words;
- Consistent and has a logical flow of ideas.

1.1.4 Project

When writing about the research project, applicants should ideally consult a professor who has supervised master's and Ph.D. students.

During a recent consultation, several evaluation committee members mentioned that the presentation of the research project was often the weakest aspect of the applications. Applicants must describe how the proposed project will contribute to advancing knowledge in the research field. The hypothesis is important but rarely adequately explained. It is important to clearly define why it is important to carry out the project (objectives, impacts) and describe how these objectives will be attained (methodology). The innovative aspects and impacts of the project must also be detailed.

To adequately define their project, applicants should answer the three basic questions detailed below. In doing so, they will draft the bare bones of the project overview, which will then enable them to clearly describe it.¹

- **What is the project's fundamental objective?** For example, to suggest processes, study mechanisms or develop systems that will provide a theoretical or practical solution to problem, substantially enhance the efficiency of a system, curb uncertainty, etc.
- **Why is this important?** For example, to optimize energy savings, increase competitiveness, reduce maintenance costs, lead to further developments, contribute to advancing the knowledge in a particular field, etc.
- **How will you go about it?** For example, by conducting a literature review, comparing a theoretical model or simulation to experimental results, generating all of the simulation and experimental data, producing documents, etc. It is also important to describe the relative significance of each step, the works schedule, etc.

1.2 Research career direction

Applicants must demonstrate and explain their motivation to pursue research studies and undertake a career as a researcher. They must be able to write texts that reflect their research skills and advance the circumstances that led them to their discipline and research subject.

1.2.1 Academic records

Students must have excellent academic records in order to submit an application. A minimum average that generally varies between B+ and A- (depending on the scholarship program) is often required.

1.2.2 Research skills

Any research, research assistance or teaching experience should be listed. Evaluators will assess the applications and reward the students who have CLEARLY AND CONCRETELY DEMONSTRATED their study and research skills.

1.2.3 Community involvement

Unfortunately, applicants often forget to point out their interpersonal skills and especially their community involvement, which is very important.

¹ Décanat des études; École de technologie supérieure; *Guide de préparation et de rédaction d'une demande de bourses d'études aux cycles supérieurs*; Montréal, 2007 (translation)

Also, leadership skills are central when assessing scholarship applications and may help committee members to select between applications of matched quality.

Applicants should mention:

- Any time invested in student, social or intellectual life in the department;
- Any time invested in cultural, sport or social activities;
- Any time invested in events (please specify);
- Any time spent volunteering;
- Any time invested as a member of an institutional committee (which?);
- Any time as president of a student association (which?).

It is also important to detail any other activity that demonstrates leadership or interpersonal skills. Even a job that is not directly related to the research field may highlight certain qualities or personal or professional skills that are valued in the research sector. For example, diversified work experience may establish spoken or written communication skills, leadership skills, analytical and synthesis skills, creativity, innovation, the ability to work as part of a group, a pleasant disposition, etc.

1.2.4 Research contributions

In general, applicants are required to submit a numbered list of their publications and communications according to agency guidelines and categories (publications with/without review committee, collective works, research reports, posters, communications, etc.). Only one condition applies: public release. It is also important to place the scientific contributions in the right category. Applicants must present their lists to their research directors or the person who oversees scholarships in the university to ensure that all research contributions are properly listed.

Avoid including texts that convey research contributions. Applicants will be penalized by the evaluation committees if their research contributions are not precisely and clearly listed.

The following presentation order is recommended:

1. Publications

- Publications with review committee;
- Publications without review committee;
- Collective works;
- Research reports;
- Internship report;
- Technical reports.

2. Presentations and posters

- Conferences with review committee;
- Conferences without review committee.

3. Other research contributions

- Technology transfer activities;
- Contributions after participating in relevant industrial R&D activities;
- Patents and copyrights.

Bachelor's students must remember to include:

- Internship report, senior project;
- Non-technical articles in student newspapers;
- Participation in student seminars, regional, national and international exhibitions;
- Participation in radio or television shows.

1.2.5 Respondents

Most of the information that will enable evaluation committee members to assess an application is contained in the letters of recommendation. The respondent must be familiar with the research project and the applicant's academic career and be able to compare the student to others in the same program and highlight the applicant's qualities. In general, letters should be submitted using the forms provided by the funding agencies.

It is important to ensure that the respondent truly wants to write the letter of recommendation. It is best to ask the respondent directly if he/she is comfortable writing a positive letter. If there is any doubt, it is far better to ask another respondent.

1.2.6 Collaboration of the research director

It is important to find a research director as early as possible to discuss the research project. In fact, projects often take form during these discussions. The research director should help define the subject and the best scientific process. It is also strongly suggested that the director revise the final version of the project overview included in the application.

1.2.7 Deadlines

Applicants must meet all competition deadlines.

Section 2: Suggestions for professors

2.1 Mentor scholarship program applicants

Mentoring students is an efficient strategy that can help scholarship applicants draft strong applications. Often, professors have already sat on evaluation committees, and this experience makes their advice all the more relevant.

2.2 Write effective letters of recommendation

When writing their letters of recommendation, professors should be aware of the weight that their opinions carry. A well-written letter is essential! Time should be devoted to writing the letter, especially since it could yield a return of up to \$50,000. Committee members are seeking information on the applicant's research potential, and chances are that they will find it in his/her letters of recommendation. In addition, respondents must always explain their statements based on facts and concrete evidence. Letters that flatter the applicant without clearly and tangibly demonstrating his/her qualities will have little impact in the assessment process.

The applicant generally trusts and has high regard for the person he/she asks to write the letter. A letter of recommendation is not a confession and does not require full disclosure of aspects such as the student's weaknesses or faults. It is best to focus on the applicant's qualities and research skills. However, a letter that is excessively positive as compared to the quality of the application is of no use. In fact, it could even be detrimental to the applicant.

Finally, it is important to remember that a good letter of recommendation often concludes with a vote of confidence. The respondent should be able to clearly explain why the applicant deserves a scholarship.

A good respondent must:

- Explain his/her expertise as a respondent;
- Have an enthusiastic tone;
- Explain why the applicant is of high calibre and deserves a scholarship;
- Highlight the applicant's skills and accomplishments;
- Underscore the applicant's academic and research skills;
- Emphasize the applicant's personal and professional qualities;
- Support the information contained in the application;
- Confirm and explain the innovative aspect of the project;
- Meet all deadlines.

Section 3: Suggestions for university administrators

It is best to adopt an integrated and coherent approach to support merit scholarship applicants. Through the implementation of clear objectives, all relevant administrative units should be invited to build on excellence. It is important to coordinate and promote student services in order to ensure that different departments are not working in isolation.

Often, it is individual professors rather than university strategies that provide support for scholarship applicants. To ensure efficiency, applicant support should be structured and offered by a horizontal administrative unit within the university (e.g. faculty of graduate studies or scholarship office).

3.1 Unequivocally value excellence

Like their English counterparts across Canada, Québec universities could systematically implement the equivalent of a dean's or department list. It would also be important to render institutional scholarships more interesting by awarding them for merit rather than admission. Finally, including class averages on academic records would facilitate the work of evaluation committee members.

3.2 Initiate undergraduate students to research

Québec universities could explore the possibility of offering honours-type programs to excellent students, as do many English universities. These programs integrate students into research earlier, inciting them to plan and implement a research project that often leads to publications. Undergraduate honours programs enable students to acquire solid research experience, which constitutes an undeniable advantage when applying for merit scholarships at the graduate level. It would also be beneficial to integrate undergraduate students into research teams.

3.3 Grant prizes and scholarships for different accomplishments

Increasing the number of scholarships and prizes offered to Québec students would prove beneficial since they recognize student excellence and constitute a significant edge in graduate-level scholarship applications. Universities in Québec, like others across Canada, should award more prizes for various accomplishments.

It would also be important to better value summer research internships, which are often students' first research experiences.

In addition, scholarships should support students' participation in international seminars and conferences. The advantage is two-fold: they provide students with research experience and add another dimension to their academic careers. Finally, universities should offer financial support to students who take part in internships outside Québec.

3.4 Structure the support offered to students applying for scholarships

Providing support for scholarship applicants is a winning strategy. Successful methods implemented by certain Québec universities include:

3.4.1 Providing information

Information on merit scholarship programs should be provided to undergraduate students. In addition, the university may want to make a scholarship application guide available on its Web site.

3.4.2 Organizing mentoring activities

Mentoring scholarship program applicants is a winning formula to support students. Mentoring activities for applicants organized by former evaluation committee members or scholarship holders can be implemented easily and constitute an advantageous approach that makes it possible for applicants to benefit from the expertise of their professors and highlights the skills of the excellent students who have received scholarships. For example, scholarship holders could be paired with current applicants. The scholarship holder's mandate is simple: to share his/her experience and help other students fill out their applications. Several universities have implemented this type of mentoring strategy and increased their success rates for various merit scholarship competitions.

3.4.3 Providing writing support

One of the main components of mentoring is providing support for students filling out applications. Several universities already offer this type of service for merit scholarship program applicants. An internal committee of professional and technical university employees is charged with revising students' applications and letters of recommendation. Changes to the applications or letters may be requested if they do not meet program standards. This approach is costly but effective.

3.4.4 Getting professors involved

Good cooperation between applicants and their directors yields higher-quality applications. Implementing measures to foster links between students and professors is therefore advantageous.

Professors who have already served on evaluation committees should share their expertise and work to enhance their university's applications. The institutions should make the most of their professors' experience.

3.4.5 Inciting excellent students to submit applications for merit scholarships

So as to obtain as many applications as possible, administrators of universities, faculties and departments should identify particularly strong potential applicants and incite them to apply for merit scholarships, even if they are unsure of pursuing their graduate studies. Doing so may be the extra push needed by students who are later thrilled to have continued their education. Sometimes, just a quick conversation with an authority figure can make all the difference, raising the interest and motivation of a student who realizes that his/her application is actually quite convincing.

Conclusion

Enhancing the quality of the natural sciences and engineering scholarship applications of Québec, Canadian and international students will yield positive impacts for the academic community and Québec society.

- For students: Greater chances of completing a study project thanks to adequate financial support;
- For professors: Integrating scholarship holders into the research group helps to support other students by freeing the funds normally allocated to salaries or scholarships;
- For the university: Scholarship holders become the ambassadors of the quality education that they received at the university;
- For Québec: Building on excellence in natural sciences, mathematics and engineering research tangibly strengthens the innovative potential of researchers and provides Québec with a leading knowledge-based economy.

This guide was written in April 2009 by Philippe-Edwin Bélanger and Paul Fortier following their tour of Québec universities. It is based on similar guides published by ÉTS, UQAM, UQAR, UQO and Université de Sherbrooke.

The FQRNT would like to thank the professors, deans of graduate studies and FEUQ representatives who contributed to this guide.

Ten-point checklist

A strong application must:

1. Include clear, concise and coherent texts;
2. Use simple, adequate and correct language (no grammar or syntax errors; no jargon or acronyms);
3. Present a well-defined project;
4. Highlight the originality, relevance and importance of the research subject;
5. Emphasize the applicant's qualities and accomplishments;
6. Link current research and the applicant's career objectives;
7. Provide accurate information;
8. Have the support of respondents able to draw attention to the applicant's research abilities in a credible manner;
9. Be revised by peers or professors;
10. Include all of the mandatory documents and be submitted before the deadline.