



6. Review of Discovery Grant Applications

6.1 Contact Points

- For applicant or research eligibility: Program Officer
- For missing documents: Program Assistant
- For application assignments: GSC Chair

6.2 Objectives

Discovery Grants assist in:

- promoting and maintaining a diversified base of high-quality research capability in the natural sciences and engineering in Canadian universities;
- fostering research excellence; and
- providing a stimulating environment for research training.

With respect to the first program objective, diversity relates mainly to supporting research across the spectrum of natural sciences and engineering disciplines. An appropriate renewal of the research capability is also necessary and is achieved through specific guidelines for the support of new applicants (see Section 6.9.2).

Other elements of diversity (e.g., geographical, gender, size of institutions supported) occur naturally through the program's activities. NSERC monitors diversity for these aspects to assure itself that an appropriate balance is maintained.

It should be realized that in a tight financial situation, the goal of achieving a “diversified base” can conflict with that of supporting excellence. GSCs are charged with maintaining an appropriate balance between these objectives.

6.3 Description

Council's largest single program, Discovery Grants, represents a major source of funding for research in Canadian universities and constitutes the foundation of a large part of Canada's research effort. Discovery Grants represent an investment both in the research activities of individuals and groups working at the frontier of science and engineering, and in the provision of a stimulating environment for research training.

Recipients of Discovery Grants are not restricted to the specific activities described in the application, but may pursue new research interests provided they are within NSERC's mandate.



6.4 Eligibility of Individuals

Eligibility decisions are an NSERC staff responsibility. GSCs that have doubts as to the eligibility of an applicant should review the application on the same basis as all others, but should alert NSERC staff to the potential problem as soon as possible. The rules governing the eligibility of individuals can be found in the NSERC [Program Guide for Professors](#).

6.5 Nature of Research Supported

Research in the natural sciences and engineering encompasses a broad spectrum of activities, ranging from investigations whose importance flows from the intellectual structure of the discipline, with no immediate application evident, to solutions to problems suggested by social and industrial needs. The Discovery Grants program is open to activities across the entire spectrum. The program is intended to foster an optimum mix of activities to keep Canada's university research establishment a healthy participant in world science and engineering, a flexible resource for Canada, and a favourable environment for the development of research personnel.

The following questions may help GSCs decide whether a proposal is suitable for NSERC support.

- Does the proposal promise a notable innovation in the discipline or results of importance to a broad range of applications? In the case where significance depends upon application, is the application general or limited to a particular user (firm, institution, etc.)?
- Will the results be appropriate for open dissemination, critical appraisal, and use in the research community?
- Is the research appropriate for graduate student participation? Would participating doctoral students be able to fulfill the common thesis criterion of an original contribution to knowledge?
- Is the research more appropriate for CIHR or SSHRC?

6.6 Conflict of Interest (See also Section [7.4](#))

When:

- a member is the applicant, co-applicant or co-signer;
- a member is, or was in the last six years, from the same university, organization or department, or belongs or belonged, in the last six years, to the same research unit as the applicant(s);
- there is an administrative or family link between the member and the applicant(s) (e.g., head of the department, dean of the faculty, etc.);



- an industrial or government representative is or was in the last six years directly involved in collaborative activities with the applicant(s);
- a member is a former research supervisor or graduate student of the applicant(s) or has collaborated or published with the applicant(s) within the past six years;
- the member is uncomfortable with reviewing the proposal due to previous conflicts or any other reason (e.g., past student or supervisor, even if more than six years ago, or personal conflict); or
- NSERC staff have reason to believe that a specific member should not be involved in the review.

Then:

- the member must not be assigned the application for review; and
- the member must leave the room before discussion of the application without commenting.

Notify your Program Officer if the applicant is a family member (or someone especially close to you) so that extra steps are taken to ensure confidentiality of reviewers.

If applicable, the final ranking of applications must be done in the absence of members with an application in the competition.

The final decision on conflicts of interest rests with NSERC.

Conflicts arising from adjunct positions or from individuals belonging to a large regional or national network should be discussed with the Program Officer.

6.7 Eligible Expenses

Discovery Grants may be used to pay the direct costs of research such as:

- payment of salaries or stipends to graduate and undergraduate students, postdoctoral fellows, research associates, technicians, programmers, etc. (see Section 6.8.3.1);
- purchase of research equipment, materials, supplies and incidentals;
- maintenance and operation of research equipment;
- rental of research equipment;
- costs of computing, statistical and consulting services;
- travel expenses for research-related activities for the grantee(s) and their research personnel;
- costs of publication of research results when such expenditures are essential to carry out the proposed research program;
- user fees and other direct costs associated with the research use of facilities; and
- direct costs related to international exchanges and collaborations.



Funds must not be used to pay for the indirect or overhead costs of research (see Section 6.8.3.1 for information on expenses related to salaries and benefits). Also, refer to “Use of Grant Funds” in the [Financial Administration](#) section of the *NSERC Program Guide for Professors* for more detailed information on eligible expenses.

6.8 Criteria for Evaluation

The criteria for evaluating Discovery Grants are the:

- scientific or engineering excellence of the researcher(s);
- merit of the proposal;
- contribution to the training of highly qualified personnel; and
- need for funds.

All the criteria must be assessed for each application, although the relative weight accorded to each may vary. For example, new applicants with little track record or reputation and few laboratory facilities should have relatively more weight put on the quality of the proposal and the need for funds. Each of these criteria is discussed in more detail later in this section.

The onus is on the applicant to provide sufficient details to allow the committee to recommend the appropriate NSERC funding level. In situations where insufficient details are provided, either as part of Form 101 – Application for a Grant or Form 100 – Personal Data Form, the committee can recommend a reduced duration, reduced funding or even no funding.

6.8.1 Scientific or Engineering Excellence of the Researcher(s)

This criterion comprises a number of factors that focus on applicants’ contributions to the field:

- Knowledge, expertise and experience of the applicant(s)
- Past or potential contributions to, and impact on, the proposed and other areas of research
- Importance of contributions to, and use by, other researchers and end-users
- What ideas have been generated?
- To what extent has the applicant’s work advanced the field, i.e. created significant changes in thought within the research area and/or influenced the activities of users?
- Where applicable, complementarity of expertise of the members of the group and synergy

This can be shown by the following:



- Stature in the field, as evidenced by invitations to lecture, write review articles, and chair conference sessions, as well as by membership on committees and advisory boards, and other less tangible factors. Current stature should be assessed based on recent accomplishments, not those of the distant past.
- Research accomplishments, as evidenced by the quality of recent contributions and overall level of contribution (impact) to research. This factor is more fully explained in Appendix [5](#). In considering researchers in engineering and the applied sciences, or interdisciplinary fields, additional factors must be considered (see Appendices [6](#) and [7](#)). **Assessment must be based on the quality and impact of contributions and not on the number of publications or the journals in which they appear.**
- Knowledge of the field and demonstrated expertise, as evidenced in the application. Some researchers do most of their work in a collaborative mode. Publications are often prepared jointly with students, postdoctoral fellows, other researchers, etc. Applicants should describe their intellectual contribution to collaborative work or joint publications in their Personal Data Form. The assessment of excellence must fully take into account the overall quality and impact of these collaborative activities.

For established researchers, there must be evidence of significant contribution to the field in the recent past (six years) and promise of further significant contributions. For researchers with a non-academic background in research and training (e.g., government or private sector), contributions can be considered over the last ten years.

For new applicants, the focus must be on their research potential.

6.8.2 Merit of the Proposal

Research supported by NSERC must always satisfy the criterion of high quality. For a program to be appropriate for support, it must be clear that genuine research problems are addressed. The program must not be limited to development of specific applications of existing knowledge. It must promise an original and innovative contribution. In assessing the merit of the proposal, the following factors should be considered:

- Originality and innovation
 - Will the research make a new contribution to the field?
- Significance and expected contributions to research
 - What will be the impact of the research?
 - Will it advance our knowledge of the field?
 - Will the results be appropriate for open dissemination to, critical appraisal by, and use in the research or receptor community?
 - Does the program promise results of importance to a broad range of applications?
 - In the case where significance depends upon application, is the application general or limited to a particular user (firm, institution, etc.)?



- Clarity and scope of objectives
 - Are there long-term goals as well as short-term objectives?
 - Has the applicant placed the research in a theoretical framework, with appropriate reference to other work in the field?
 - Are the objectives specific, well-focused and realistic?
- Extent to which the scope of the proposal addresses all relevant issues, including the need for varied expertise within or across disciplines
 - Do the research questions and proposed approach include all appropriate factors and areas of knowledge?
- Clarity and appropriateness of methodology
 - Does the proposal clearly outline the methodology to be used?
 - Is it appropriate and up to date?
- Feasibility
 - Will the applicant's expertise and the proposed methodology allow the objectives to be reached within the proposed time frame?

As with the first criterion, the major emphasis for new applicants should be on the originality of the proposal and the potential to make a significant contribution to the field.

6.8.2.1 Possible Pitfalls

There are many potential dangers for GSCs in evaluating the quality of research proposals. We discuss six here:

Creeping Conservatism – In any peer review system, there is a tendency towards conservatism or excessive caution. This can manifest itself in such areas as a failure to recognize innovation and outstanding potential in a researcher, an unwillingness to take risks, or an unwillingness to sharply increase, reduce or terminate a grant.

When assessing non-mainstream applications, members should be open to new research problems and innovative approaches, and should focus their discussions on whether the problems addressed and the methodologies used will yield new and useful knowledge.

Conservatism is not surprising given the workload and budgetary pressures, as well as a GSC's natural unwillingness to cause offence. Nonetheless, each individual GSC member must strive to maintain the quality and fairness of the peer review system.

School of Thought Bias – There is always concern that a GSC may exhibit a bias based on a "school of thought," whether this bias is based on fundamental versus applied research, certain sub-disciplines, areas of research or approaches, size or reputation of university, age, personal factors or gender. Normally, NSERC has found that there is a strong self-regulating element with respect to individual biases in a committee situation, especially with a regular rotation of membership.



Members must, however, constantly guard against the possibility of hidden bias influencing the decision-making process. NSERC particularly cautions GSC members against any prior judgement of an individual based on the size or reputation of his/her university. Good research can be carried out at a small university and mediocre research at any size of institution.

Collaborative Endeavours and Interdisciplinary Research – Increasingly, research on the most significant problems in science and engineering requires the combined knowledge, expertise and contributions of many researchers, often from various disciplines. Such collaborative and concerted activities should be actively encouraged through the Discovery Grants program, and GSCs should be particularly careful to give adequate credit to effective research interaction. In the past, inappropriate emphasis on single-authored papers and lack of appreciation for strong multi-authored papers have created a perception that Discovery Grants support only individuals working alone. Creativity and innovation are at the heart of all research advances, whether made individually or in groups. The role of collaboration and interdisciplinary work as means to greater achievement in research must be fully valued by the peer review system.

Researchers have the freedom to select the mode of research activity that appears most appropriate. At present, while most researchers apply for a Discovery Grant individually rather than with a group, many use their individual Discovery Grant to support their collaborative activities. The collaborations may be of a short-term nature for a particular series of experiments, or of an ongoing nature.

Group Grants – Currently, only about 1 per cent of awards are group grants. This choice should not mitigate against collaborative work. The decision to apply as a group often reflects the multidisciplinary nature of certain research areas, or results from the availability of other funding sources, (e.g., provincial programs) favouring collaborative research. Researchers who work together in a collaborative long-range research program that encompasses the central research interests of the group members are encouraged to apply as a group. They may be working on different aspects of the program, but share the same common goal.

A good research “team” is more than the sum of its parts. In assessing group grants it is important to determine the expertise required to achieve the goals of the proposed research and look at each member of the team and evaluate their potential to contribute to the research goals, their track record and the extent of their contribution. The focus should be on the value added by combining the applicants’ expertise and experience. The overall significance and impact of the group activities must be assessed and integrated in the funding recommendation, keeping in mind that the synergy of an effective research collaboration should lead to a higher overall level of funding.

Researchers who apply as a group should not be penalized and their funding levels should not be lower than if they had applied individually (see Section 6.9.4 for guidelines on this issue). All contributors (applicants and co-applicants) must be considered on the same



footing; the applicant is simply the researcher identified as responsible for administering the award.

Program statistics show that group applications generally have a lower success rate and lower average grant/researcher than individual applications. GSCs should keep this in mind and ensure that their recommendation in each case is fully justified.

Program vs. Project – The Discovery Grants program aims to support a researcher’s ongoing research program, which can comprise a number of well-defined projects.

An application (particularly from a new applicant) should not be downgraded simply for being in the form of a project. The application must be examined with respect to the four Discovery Grants criteria. The issue of whether the request is for support of a program or a project can be examined in the context of the “Merit of Proposal” criterion when evaluating the “Clarity and Scope of Objectives” (e.g., long-term goals as well as short-term objectives), and the “Significance and Expected Contribution to Research.”

Options for committees evaluating cases where the proposed research is presented as one or more projects can include awarding a grant of a shorter duration if meritorious, or not awarding a grant if the research proposed is considered to have insufficient merit. Applicants should receive a comment to reflect the GSC’s concerns related to the scope of objectives and possibly other criteria.

Applied Science – GSCs that have a small proportion of applied science applications will often be more familiar with the track record indicators used for “pure” scientists. They must guard against placing emphasis on “pure” science indicators of achievements such as publications in refereed journals and ignoring or de-emphasizing indicators of applied research achievements.

GSCs are encouraged to consult the “Guidelines for the Preparation and Review of Applications in Engineering and the Applied Sciences” (refer to Appendix 6) and the “Guidelines for the Review of Applications in Interdisciplinary Research” (refer to Appendix 7) for more information on NSERC’s policies for these types of research.

6.8.3 Need for Funds

Grant levels should reflect relative costs of research in different areas insofar as possible. Failure to take cost into account can have a steering effect toward low-cost programs over those of greatest scientific interest. There has been a certain reluctance on the part of some GSCs to take into account the cost of research because the size of a grant is seen as a de facto measure of the stature of a researcher. This is not appropriate. Committees should communicate this policy to the research community. In assessing the need for funds, the following must be considered:

- Appropriateness of and justification for the budget



- Availability of other sources of funding and their relationship to the current proposal
- Special needs related to the nature of collaborative activities or infrastructure costs such as user fees

Some of the factors which influence need are discussed below.

6.8.3.1 Human Resources

There are significant similarities in personnel costs across all types of research supported by NSERC. Discovery Grants can be used to pay salaries and non-discretionary benefits for undergraduate and graduate students, research associates, technicians, programmers, etc. and for postdoctoral fellows (for up to two years). The salaries paid to research personnel are generally similar from one discipline to another, and involvement in training activity is strongly encouraged for all research support programs. It is reasonable for committees to estimate need on the basis of the records of past training activity and appraisal of well formulated plans in the proposal.

Maximum rate for a master’s student's salary	\$16,500
Maximum rate for a doctoral student’s salary	\$19,000
Minimum rate for a postdoctoral fellow's salary	\$25,000
Maximum rate for a postdoctoral fellow's salary	no maximum
See the NSERC Program Guide for Professors for details.	

There are often significant differences between provinces, universities and even departments regarding the amount that researchers have to pay from their grant funds to support students. GSCs should be sensitive to these, especially when the size of an award will determine whether a researcher can support a student or not. GSCs are free to adjust the size of an award to take such differences into account. There are, however, many factors that affect the need for funds and many reasons why some researchers receive higher awards than others.

6.8.3.2 Other Costs of Research

Equipment, Materials and Supplies – The need for equipment and supplies and the costs of operation and maintenance can vary greatly. Striking differences exist between disciplines. The percentage of Discovery Grants funds spent on equipment by the various disciplines ranges from a high of 12 per cent to a low of 5 per cent. Similarly, expendable materials can account for as much as 36 per cent to as little as 13 per cent of expenses. Differences within a discipline may often be more subtle, but some specific situations may warrant special attention. (e.g., theoretical vs. experimental work). GSC members should use their own knowledge of the cost of research in their discipline to decide on an appropriate level of support for these categories of costs. The Program Officer may be able to provide additional statistical information, if needed.



The NSERC *Program Guide for Professors* states that: “Research Tools and Instrument Grants assist in buying or developing research equipment that costs more than \$7,000. Items costing less than \$7,000 each can be purchased with Discovery Grant funds or be included as a complement to a main piece of equipment being requested.” However, this guideline does not prevent applicants from requesting, and being awarded, equipment worth more than \$7,000 as part of a Discovery Grant. The applicant should provide a justification for the equipment requested. The "Use of Grant Funds" section in the [Financial Administration](#) part of the *Guide* describes eligible expenses for equipment purchases and maintenance.

Some applications may include a request for equipment in the first year or in some years and not others. Your Program Officer can suggest how to deal with such situations when making the final recommendation.

Infrastructure Costs – Many researchers need access to local and other facilities. In considering the level of support to be awarded to these researchers, such costs, which researchers have to pay in user fees through their grants, should be taken into account. Applicants are asked to describe these costs in their budget request.

International Activities – NSERC is strongly committed to supporting international collaborations. Reasonable out-of-pocket expenses may be paid for the grantee and his/her research personnel or for colleagues working with the grantee, for visits (international or national) of periods of up to three months.

Stipends may be paid to visiting researchers not eligible for NSERC funding for a period of up to 125 days per year and to a maximum of \$2,000 per month.

Conferences – Discovery Grants can be used to pay for conference registration fees.

Other Special Costs – Travel costs for sabbatical leave and other special costs such as field work in remote locations must be considered by GSCs. If support of this nature is considered necessary, it should be included in the level of the Discovery Grant, even if this results in a larger award than to other applicants of similar stature. A specific comment explaining the rationale for the level awarded would be appropriate in such cases.

6.8.3.3 Other Sources of Funds

It is becoming increasingly rare today that a Discovery Grant represents a researcher's only, or even major, source of support. In most disciplines, there are a variety of sponsors from government and the private sector. The philosophy of the Discovery Grants program includes the concept that the Discovery Grant provides core support for the grantee's ongoing research activities, facilitating the conduct of a coherent program of research over relatively long spans of time. Other programs may fund projects, either related to this core or distinct, or may provide incremental extension of the core activities



themselves. Many of these other funds are provided in full knowledge of the Discovery Grant support available to the researcher.

The GSC may **not** adopt a blanket policy of giving priority to applicants with no other sources of funding. However, based on the need for funds criterion, a GSC may decide to support a meritorious applicant who has no other sources of funding over awarding a grant or a specific level of funding to one that has numerous other sources of funds. Such a decision must be made on a case-by-case basis after assessing each individual's need for funds and in light of the other program criteria.

The possession of other sources of support should not be a reason to deny or limit access to Discovery Grants unless there is evidence of duplication of funding, or a failure to demonstrate fruitful incrementality. Other sources of support should be viewed as a positive indicator of the attractiveness of the research program to the research and/or user community. However, GSCs must be careful not to equate level of funding with stature and excellence. Indeed, some researchers, due to the nature of their research, may be limited to NSERC as a source of support.

Others may elect to follow a more focused program of research and thus choose to seek funds only from NSERC. In all cases, discussions about the level of funding should focus on the four evaluation criteria, the specific circumstances and the appropriateness of the choices made. However, there comes a point when additional support to a very well funded researcher may no longer be the most effective use of funds.

The concept of **research capacity** may be useful in appraising the need for funds. Simply put, research capacity is a measure of the amount of research that an individual or team can carry out effectively. This includes supervision of undergraduate and graduate students, postdoctoral fellows, and research assistants. Some researchers will be operating at full capacity supervising a group of one or two people. Others may be working at less than capacity with 10 times that number. Both may be producing results of the highest possible calibre and making outstanding contributions.

Capacity should not be confused with competence or stature. Lower research capacity may be a reflection of personal choice or it may be influenced by other commitments that limit research time. Some researchers are able to carry exceptional teaching or administrative loads, or other professional responsibilities, while maintaining an effective research program involving many students and associates. The key test of capacity is performance, the record of research produced. If a researcher has taken on too much, this will become apparent in the quality and overall level of the research, affecting subsequent Discovery Grants.

In an ideal world, it would be desirable for NSERC to be able to provide Discovery Grants that would fund researchers at a level close to their capacity. However, in the real world, NSERC's budget does not allow such funding levels. Most researchers must find funds elsewhere to help them reach their research capacity. An exercise carried out by



GSCs in 1997 to estimate the funding shortfall in the Discovery Grants program has shown that on average, researchers could productively use twice as much as the award they receive.

The large number of applications for additional funding through other programs (e.g., NSERC Research Partnerships Programs, Networks of Centres of Excellence) and the relatively low success rates in many of these programs also suggest that the research community in Canadian universities is working at considerably less than full capacity. It is therefore essential that the peer review process include consideration of research capacity in allocating limited funds. It is an essential element of the analysis of the need for funds.

6.8.3.4 Addressing Other Sources of Funding

There are various sources of funding available for each discipline. Other sources of funds include other NSERC programs, government, industry and private sources. NSERC allows researchers to obtain funds from other sources, but does not allow duplication of funding for the same research.

The principles in assessing the overlap with other sources of funds are that:

- access to NSERC Discovery Grant funds should be fair for all applicants, regardless of their other sources of funding;
- applications are judged according to the four review criteria; and
- there should be no duplication of funding for the same research. However, when research programs are supported by multiple sources, the additional benefits of NSERC support must be well explained and justified.

Applicants must provide clear and concise information on the relationship (conceptual and budgetary) or lack of relationship of the proposed research to all support currently held or applied for. They must also explain perceived duplication in funding or, if applicable, indicate how the NSERC application complements research funded by other sources. For each grant currently held or applied for, applicants must clearly indicate the main objective, a brief outline of the methodology, budget details, the support of highly qualified personnel, and their relationships to the NSERC application. Such information may be provided, for example, in the form of a brief summary of the necessary details for each grant, and attached as additional pages to the budget page of Form 101.

The onus is on the applicant to provide sufficient information to enable a review committee to evaluate the relationship with other sources of support and to recommend the appropriate NSERC funding level. The consequence of not providing adequate information to assess the relationship to other research support is that the selection committee can recommend reduced or no funding. A one-year award with a comment to clarify overlap may also be appropriate.



Relationship to CIHR and SSHRC

For applicants whose research might fall under more than one federal granting agency (NSERC, CIHR, or SSHRC), NSERC expects researchers to select one of the granting agencies to support their ongoing research activities. A researcher may **not** submit the same application to NSERC and CIHR or SSHRC. In certain cases, applicants submit the same application to organizations other than NSERC, CIHR or SSHRC. In these cases, if meritorious, a conditional award can be made with the institution such that if the other application is successful, the NSERC award will be withdrawn.

There are instances, however, where support from more than one agency may be appropriate. CIHR and SSHRC grants should be treated as another source of funds (as described above). (See also Section 6.8.3.3.)

For applications that might not fit NSERC's mandate, NSERC follows a process of evaluation. In consultation with CIHR or SSHRC, some applications may be withdrawn from the NSERC competition. New guidelines are being developed to help NSERC and applicants deal with this issue.

6.8.4 Contribution to Training of Highly Qualified Personnel

Definition

Training supported by NSERC ranges from undergraduate theses and summer projects to postdoctoral levels, and includes technical and other research personnel. Training should be appropriate to the research field, with opportunities for interaction and collaboration with other researchers inside and outside the university, where appropriate.

Undergraduate student participation in final year projects and summer projects is an important first phase in research training and plays a major role in ensuring that students are encouraged to pursue research careers. For technicians and others who have been in long-term positions, the new techniques and knowledge being acquired should be explained. It is also recognized that not all research will be appropriate for training and there will be circumstances when training will not be possible. In these cases, the onus is on the applicant to provide an explanation of why there is no training component.

It is appropriate that selection committees and panels encourage the best researchers to take on trainees, and the degree to which an applicant is supporting trainees should be recognized in determining the funding level (see Section 6.8.3). However, the fact that an applicant has trained, is training or plans to train students, technicians, or postdoctoral fellows is not, in itself, a sufficient rationale for awarding a grant. The applicant and the research program must also meet the standards of excellence of the grants program. Also, a researcher's contribution to training must be assessed in terms of its quality and impact, and not solely in terms of the number of people supervised. As with the assessment of quality and impact of publications and other research contributions, evaluation of this is subjective, but is central to peer review.



Applicants must discuss past training contributions at all levels, as well as the potential of the current proposal for training opportunities. Current and past contributions either as sole or co-supervisor are described in the Personal Data Form (Form 100) and the proposed training is described in the Application for a Grant (Form 101). The following questions are appropriate to help assess the applicant's involvement in research training:

Personal Data Form (Form 100)

- Have the resulting contributions been of high quality?
- Have the students and other personnel been sought for further research positions (e.g., Ph.D. program, postdoctoral position or permanent positions)?
- Have the people trained by the applicant gone on to become respected professionals in fields related to science and engineering?
- In the context of the research field and the applicant's capabilities, is the past level of training activity appropriate? If not, has appropriate justification been provided?
- Is there evidence that graduate students are publishing with their supervisors?
- How long are the students taking to complete their program?

Note: NSERC requires applicants to obtain consent forms before including the names of students in Form 100. As this is not always feasible, applicants can provide information on students without providing names. This information might be more generic. Applicants should not be penalized for not having specific names of students if the generic information is provided.

Application for a Grant (Form 101)

- Are the projects feasible and appropriate for the training proposed?
- What opportunity will there be for contact and collaboration with, or training in, other sectors, if appropriate?
- What opportunity will there be for disciplinary and interdisciplinary collaboration, if appropriate?
- Will trainees be able to make an original contribution to knowledge?
- Has the applicant demonstrated the capacity to supervise the number and type of trainees proposed?
- Is the proposed balance between undergraduates, postgraduates, postdoctoral fellows and others appropriate?
- If little or no training is planned, has an appropriate justification been given?



Background and Rationale

Advanced training in science and engineering is an integral part of university research and NSERC's mission to foster the discovery and application of knowledge. This training ensures the availability of a highly skilled labour force, capable of thinking critically and contributing to the creation and application of knowledge for the benefit of Canada. Individuals trained in science and engineering are ideally positioned to capitalize upon new ideas and technologies developed in Canada and elsewhere in the world, whether they work in universities, industry or government. Professionals in science and engineering contribute to our national competitiveness and productivity, as well as to understanding ourselves and our natural and physical environment, leading to improvements in the standard of living and quality of life for Canadians.

Those that pursue academic careers maintain Canada's international competitiveness in research in science and engineering, and continue to renew our intellectual resources by training the next generation of researchers. In government, they do research, and develop and implement policies, standards and regulations on issues of national interest, such as the environment, natural resources, health, etc. Other professionals in the public sector contribute to maintaining and enhancing the national framework for competitive R&D through teaching, administration and research dissemination. However, current trends indicate that most graduates will not obtain employment in the academic or public sectors. In the near future, the best employment prospects for many science and engineering graduates will be in the private sector. Indeed, university graduates are the primary route by which new knowledge and expertise are transferred from the universities to the Canadian private sector. In addition to those hired by existing companies, many start their own businesses, creating jobs and new economic opportunities, and strengthening Canada's industrial research base.

NSERC anticipates that most individuals whose training has been made possible by support from a grant will produce theses and other high quality contributions to knowledge, and will move on to careers in the fields of science and engineering, whether as professionals in the private or public sectors or academia, as both producers and users of knowledge.

6.8.5 Special Categories of Applicants

You will find below a short description of categories of applicants for Discovery Grants.

In an effort to simplify the way we categorize applicants, and to make it easier to identify and track actual **first-time** applicants, staff have implemented the definitions shown below. These categories have the advantage of clearly showing new and experienced first-time applicants, while allowing comparison with previous years' data if needed.



First-Time Applicants			Returning Applicants			
New	Experienced		Without a Grant		With a Grant	
(FN)	Academic (FA)	Non-academic (FNA)	New (RUN)	Continuing (RU)	1st time (RF\$)	2nd or more (R\$)

A. First-Time Applicants

First-time applicants are researchers who have **never before applied to NSERC’s Discovery Grants program, either as an individual or as part of a team or an SAP project grant.** The practical limit of “never before” would be the electronic record of that individual in the NSERC database.

- **FN – First-time new applicant** has been in his/her first eligible position at the university for less than two years with no prior academic or non-academic work experience involving research (two years from September 1 of the year of application, e.g., an FN applying for the first time in November 2006 would have been hired on or after September 1, 2004).
- **FA – First-time experienced academic applicant** has had at least two years experience in an academic setting (e.g., foreign or Canadian university experience).
- **FNA – First-time experienced non-academic applicant** has had at least two years previous experience in a non-academic setting (e.g., research experience in government or industry).

B. Returning Applicants

Returning applicants are researchers who have applied to the Discovery Grants program, either as an individual or as part of a team or a SAP project grant. There is no time limit on this; however, the practical limit is that they should show an application in NSERC’s electronic database, which goes back about 30 years.

Without a Grant:

- **RUN – Returning unsuccessful FTA** who had a nil decision in their first Discovery Grant application and are applying for the second time.
- **RU – Returning unsuccessful applicant** had a nil decision for his/her last recorded Discovery Grant application (no longer qualifies as an RUN).

With a Grant:

- **RF\$ – First-time renewal applicant** has a record of having been funded and just coming off of his/her first Discovery Grant, regardless of the year of that decision. These may be grantees just completing the term of their first Discovery Grant or grantees who have skipped any number of years between the end of their first Discovery Grant and the reapplication.



- **R\$ – Second or more renewal applicant** has a record of having been funded and coming off his/her second or greater number of granting periods. These may be grantees just completing the term of their last Discovery Grants or grantees who have skipped any number of years between the end of their last Discovery Grants and the reapplication.

6.8.5.1 New Researchers

For the purpose of monitoring how GSCs treat new applicants, we are including the following categories within this grouping:

- FN – First-time new applicants
- FA – First-time experienced academic applicants
- FNA – First-time experienced non-academic applicants
- RUN – Returning unsuccessful FTA (i.e., includes the above three categories)

The purpose of these categories is to define fairly homogeneous groups of researchers whose applications can be compared. If an applicant does not formally fit the definition but has career circumstances which are similar to those of new applicants, the application should be reviewed taking into account the factors that are applicable.

New researchers face many hurdles in developing a strong research program in a time of increasing cost of research and tight resources. Decisions on the funding of new researchers have major ramifications for their research careers and must be made with great care. Council's policy is that new researchers who demonstrate the potential to conduct a significant program of research should be given an adequate opportunity to demonstrate their research capability.

New researchers must have the required qualifications, and exhibit a comprehensive knowledge of the field. Their proposals should demonstrate originality and independence of thought, and the potential to make a significant contribution to the field. Their track record may be limited and should receive relatively less emphasis than in the case of renewal applicants (there should be no requirement for a documented publication record, for example); however, where these exist, the quality and relevance of previous publications should be taken into account.

For new researchers, it is important that potential for research be clearly demonstrated in the application. It is better for a GSC to identify major problems in a proposal and suggest reapplication than to promote a poorly formulated or conceived research program. The following qualitative selectivity norms are to be applied by all GSCs:

- The applicant must provide a strong, well-conceived and formulated proposal which addresses a significant research issue, describes a feasible approach, and demonstrates awareness of other research pertinent to the issue.



- The applicant must provide evidence of an intellectual ability to make original contributions to research. As appropriate to the discipline, evidence may come from one or more of the following:
 - Research contributions
 - External referee comments
 - The application itself

In other words, the applicant must have a good idea and the ability to carry it out. New researchers who continue to collaborate with previous supervisors or who carry out their research as part of a group should not be disadvantaged.

New researchers judged worthy of receiving an award must be provided with funding of sufficient amount and duration to enable them to produce evidence of progress in subsequent applications. The appropriate level varies from field to field, but should take into account the costs associated with initiating a program of research in that area. If equipment is absolutely necessary to launch the proposed research, it should be considered when reviewing Research Tools and Instruments Grants.

The period of guaranteed support should normally be five years, recognizing that it takes time to initiate a program of research and bring it to the point at which it is generating significant results, especially with all the other duties of new faculty members. However, GSCs may prefer in some cases to recommend two- or three-year grants initially, to avoid locking grantees into a fixed level of funding over a longer period. If so, a message must be sent to the grantee indicating the rationale for a starter grant of short duration.

6.8.5.2 Holders of Canada Research Chairs

The Canada Research Chairs program was created to support the establishment of 2,000 Canada Research Chairs in universities across the country. The program's emphasis is on investment in basic and applied research at Canada's universities.

The key objective of the Canada Research Chairs program is to enable Canadian universities, together with their affiliated research institutes and hospitals, to achieve the highest levels of research excellence to become world-class research centres in the global, knowledge-based economy.

The secondary objectives of the Canada Research Chairs program are to:

- strengthen research excellence in Canada and increase Canada's research capacity by attracting and retaining excellent researchers in Canadian universities;
- strengthen the training of highly qualified personnel through research;
- improve universities' capacity for generating and applying new knowledge; and
- optimize the use of research resources through institutional strategic planning, and interinstitutional and inter-sectoral collaboration.



There are two types of Chair:

- Seven-year renewable Chairs (Tier 1) targeted at experienced researchers who are acknowledged by their peers as world leaders in their own fields
- Five-year chairs (Tier 2), renewable once, targeted at researchers who are acknowledged by their peers as having the potential to lead in their fields

Canada Research Chair holders are eligible to hold other NSERC funding concurrently with a Canada Research Chair award, including Discovery Grants. It is important that the same criteria be applied to chairholders as to any other applicant to the Discovery Grants program, taking into account the guidelines for both the preparation and review of applications in engineering and the applied sciences, and in interdisciplinary research, as appropriate. The onus is on all applicants to demonstrate that there is no duplication of funding between the research proposed in the Discovery Grants application and research that is supported from other sources of funding, including Canada Research Chair awards.

Many chairholders have been in Canadian academia for some time and hold Discovery Grants. These should be reviewed in the usual manner. The amount of research support available from the Canada Research Chair award should be taken into account in the same way as other sources of support with the realization that the Canada Research Chairs and Discovery Grants support a program of research.

Some chairholders will be young or more established researchers attracted to Canada through the Canada Research Chairs program. Their applications should be reviewed in comparison with those of researchers at a similar stage of their career and supported at a level commensurate with its merit.

6.8.5.3 Holders of Industrial Research Chairs and Northern Research Chairs

Industrial Research Chair (IRC) awards are jointly funded by NSERC and industry. They are intended to:

- assist universities in building on existing strengths to achieve the critical mass required for a major research endeavour in science and engineering of interest to industry; and/or
- assist in the development of research efforts in fields that have not yet been developed in Canadian universities but for which there is an important industrial need.

A Northern Research Chair is intended to assist in building capacity and developing research efforts in Northern research.

A Chair award provides salary support for the Chairholder(s) and funding for a program of research in an area of interest to the industrial sponsor(s) or the North for a term of five



years. If peer review is positive and the industrial partner is willing to continue its support, an IRC may be renewed for subsequent five-year terms. During the second term, NSERC provides salary support on a declining scale, in addition to its support for the Chairholder's research program; in subsequent terms, NSERC support is for the research program alone. IRC, Northern Research Chair and Canada Research Chair awards may be held concurrently subject to certain conditions. Northern Research Chairs can also be renewed for a subsequent five-year term.

IRC and Northern Research Chair holders are eligible to hold other NSERC grants concurrently, including Discovery Grants.

It is important that the same criteria be applied to Chairholders as to any other applicant to the Discovery Grants program, taking into account the guidelines for the review of research in engineering and the applied sciences, as appropriate. The onus is on all applicants to demonstrate that there is no duplication of funding between the research proposed in the Discovery Grant application and research that is supported from other sources of funding, including IRC and Northern Research Chair awards.

6.8.5.4 Adjuncts

It is Council policy to recognize and support the important role in university-based research and research training played by adjunct professors in Canadian universities. Adjunct professors and similar part-time appointees are fully eligible to apply for NSERC Discovery Grants. GSCs should evaluate applications from adjuncts based on the normal criteria, supplemented by consideration of the extent of adjuncts' university-based research, including involvement with other faculty and the training of highly qualified personnel.

All applicants whose eligible appointment is part-time must complete Appendix C of the application. This includes adjunct professors. In Appendix C, applicants are asked to describe their activities (research, teaching, training, administration or other) at the Canadian university and to indicate the time normally devoted to each of these activities. They are also asked to indicate if they have another place of employment and to describe the nature of their research and other responsibilities there. Finally, they must describe the relationship between their research program at the other place of employment and the research proposed in the NSERC application. Appendix C is part of the material reviewed by GSCs. It is intended to help assess the commitment of adjuncts to university research and training. NSERC funds are normally awarded only for the support of students (*salaries/stipends/travel*) in cases where the research programs at the two places of employment are the same or closely related. Funds can also be provided for other forms of training if the GSC believes it is justified. A GSC may wish to recommend that an award be conditional on a student actually agreeing to work under the adjunct's supervision if there are concerns about whether a student will materialize. Support for other purposes is justified on a case-by-case basis when the researcher's activities are



distinct at the two places of employment or when the commitment to the university-based research activities is similar to that of a regular academic faculty member.

GSCs are reminded that, when warranted, they can recommend restrictions on the use of funds for awards to adjuncts. The level of awards for adjuncts should also take into account the commitment of the applicant to university research and training. While it is expected that, on average, the part-time commitment of adjuncts will result in lower grant levels than those of full-time faculty, NSERC is concerned that the success rate of adjunct applicants with a first affiliation in industry or government has been quite low recently.

In recent years, a number of applicants have been adjunct faculty with no employment outside the university. Such cases should be reviewed on a case-by-case basis in the context of individual circumstances.

In all cases, the onus is on the applicants to provide sufficient information to enable the GSC to accurately assess their contributions to university research and training.

6.8.5.5 Emeritus Professors

NSERC eligibility criteria apply to all academic appointments (see the NSERC [Program Guide for Professors](#)). Emeritus professors whose terms of appointment meet the eligibility criteria are fully eligible to apply for NSERC Discovery Grants. Those holding part-time appointments *outside Canada must spend a minimum of six months per year at an eligible Canadian institution*. Emeritus professors are required to complete and submit Appendix C, addressing the applicant's university-based research and training activities. See the second paragraph of Section 6.8.5.4 for details on the information contained in Appendix C.

Applications from emeritus professors are to be evaluated on their own merits, using the four criteria for Discovery Grants. NSERC is committed to the support of excellence irrespective of the status of the researcher(s), as long as the academic appointment meets the eligibility criteria. Since most emeritus professors are relieved of many of the non-research and non-training responsibilities of full-time faculty, their research and training activities may represent an important resource.

In making their funding recommendations, GSCs will be faced with choices in order to achieve an appropriate balance between the funding awarded to established researchers and new applicants. As in the case of adjunct professors, for emeritus professors, the extent of the applicant's involvement and participation in university life should be considered. The total costs of research activities, as well as the balance of research costs (salaries, supplies, travel, etc.), will likely be different for emeritus faculty compared to regular faculty because of the different teaching and administrative load and the fact that some universities do not allow emeritus professors to be the sole supervisor of students. While GSCs may be reluctant to reduce the award of emeritus or other professors who



have a high stature, as with all awards, actual needs must be taken into account when recommending the level of the award. Unless justified by the needs of the research program, comparatively more funds should not be awarded for certain expenses (e.g., travel) for emeritus faculty simply because they have more time to travel.

6.8.5.6 Applicants From Small Universities

GSCs are asked to give careful and sensitive evaluation to requests from researchers working at small universities with respect to the challenges they face and the important role these institutions play in the training of highly qualified personnel. Special attention should be paid to the need for funds particularly as it may relate to lower institutional support for students or general research costs and the need to travel more often to access facilities or interact with collaborators.

6.8.5.7 Applicants from Royal Military College

NSERC will not support work that is solely intended for the Canadian Forces/Department of National Defence (DND), i.e., grants cannot be put towards any activity that is already supported and covered by DND's mandate.

6.8.5.8 University Faculty Awards

Description

The University Faculty Awards (UFA) program is designed to *enhance the recruitment, retention and early career progression* of women and Aboriginal people in tenure-track faculty positions in the natural sciences and engineering in Canadian universities *by providing opportunities for them to establish a strong research record*. The awards are tenable for a period of five years and 25 new awards are available each year. NSERC will contribute to the partial reimbursement (\$40,000) of the awardee's salary and fringe benefits. Research support is provided through a Discovery Grant. Award holders are expected to devote the majority of their time to research and development, participate in the supervision of students, teach a maximum of one full course per year, and accept no more than a half service or administrative load.

The UFA program requires Canadian universities to offer, at the time of nomination, a tenure-track or tenured appointment to nominees. The offer of an appointment may be conditional on the receipt of the award. *Alternately, individuals hired into a tenured or tenure-track position at the nominating university no more than one year before the UFA nomination deadline may also be eligible under certain conditions.*

In order to remain eligible for UFA support, awardees must at all times hold an active Discovery Grant. UFA recipients from competitions prior to 2006 must apply for renewal of their Discovery Grant during year 3 of their award. UFA recipients from 2006 onward will receive a UFA with a duration matching that of the Discovery Grant, up to a



maximum of five years. If the initial Discovery Grant is awarded for five years, the UFA will automatically be awarded for five years. If the duration of the initial Discovery Grant is less than five years, the candidate must reapply and be successful in the Discovery Grant renewal stage in order to receive the subsequent UFA instalments (up to a maximum of five years). At the end of year 3, a progress report will be completed by the university and UFA holder and submitted to NSERC. Continued support will be subject to a satisfactory evaluation.

November 1 is the deadline for NSERC to receive UFA nominations and the accompanying Discovery Grant application.

Review Process – Overview

Applications are reviewed by two NSERC selection committees: the appropriate GSC and the UFA Selection Committee (UFASC). The GSC evaluates the Discovery Grant application of the candidate and provides comments and ratings to the UFASC on the excellence of the individual and the merit of the research program. This input will represent 40 per cent of the final UFASC score. The UFASC evaluates the UFA nomination prepared by the university, by assessing the rationale for the need for female or Aboriginal representation in the discipline/institution (30 per cent of the overall score) as well as the institution's commitment (30 per cent of the overall score). The UFASC meets in March to review the nomination documentation, and determines the successful candidates.

Review Process for Discovery Grant applications of UFA candidates (See Sections [3.2](#) – Assignment of Internal Reviewers, [6.6](#) – Conflict of Interest and [6.8](#) – Criteria for Evaluation)

The GSC Chair will assign each new and renewal UFA Discovery Grant application to the committee members who are the most appropriate to review it. The assignment of external referees will be done for UFA candidates in the same manner as for other Discovery Grant applicants. GSCs assess the applications of UFA candidates in the same manner as those of new or comparable applicants. The GSC recommends the level and duration of the grant based on the four standard criteria for Discovery Grants (scientific or engineering excellence of the researcher, merit of the proposal, need for funds and contribution to training of highly qualified personnel). Most new UFA nominees will not have applied for a Discovery Grant in the past. Therefore, given that they are new applicants, more weight should be placed on the research proposal. The GSC recommends an appropriate Discovery Grant award level and duration for each UFA candidate. The grant funds come from the relevant GSC's budget. Any UFA applicant who was not recommended for a Discovery Grant is removed from the UFA competition.



GSC input to UFASC

For each new UFA candidate, the GSC completes a summary sheet, providing detailed comments, a rating, a ranking, a funding level and a grant duration. For renewing UFA candidates (recipients from competitions prior to 2006 applying for renewal of their Discovery Grant at year 3), GSCs are to provide detailed comments, funding level and grant duration.

The comments, rating and ranking focus on the excellence of the candidate and the merit of the research proposal. The major emphasis for UFA applicants should be on the originality of the proposal and the potential to make a significant contribution to the field. The summary sheet is completed during the competition meeting. An overall relative weighting of 40 per cent of the final UFASC score will be given to the rating provided by the GSC.

Note: Candidates applying for a Discovery Grant may also be applying for a Research Tools and Instruments Grant. GSCs should evaluate the Research Tools and Instruments Grant requests of UFA nominees as they do those of all new applicants (see Section 6.8.5.1). Comments on the RTI Grant are not required as part of the UFA selection process.

Note: Any comments, ratings and rankings provided to the UFASC are a form of input into the UFA application review process. All review material and comments will be made available to applicants.

Scientific or Engineering Excellence of the Nominee

- Knowledge, expertise and experience
- Quality of past or potential contributions to, and impact on, the proposed and other areas of research
- Importance of contributions to, and use by, other researchers and end-users
- Complementarity of expertise of the members of the group and synergy (where applicable)

Merit of the Research Program

- Originality and innovation
- Significance and expected contributions to research
- Clarity and scope of objectives
- Feasibility
- Extent to which the scope of the proposal addresses all relevant issues, including the need for varied expertise within or across disciplines



Deliverables

Detailed comments to the applicants (*new and renewing UFA candidates*), and ratings and rankings (*new UFA candidates only*), should be submitted to NSERC by late February for communication to the UFASC.

The Five-Point Rating Scale (see [Rating Form](#)):

The Discovery Grant application of each new UFA applicant is rated on a five-point scale with one decimal value allowed. These ratings may help to rank order applications (see following section). Committee members are encouraged to use the full range of the rating scale, when appropriate, for applicants in the same peer group (e.g., first-time new applicants, etc). The rating will represent the GSC’s combined evaluation of the candidate’s scientific or engineering excellence and the merit of the research proposal. The rating will be converted into a corresponding value representing 40 per cent of the final UFASC score.

The five-point rating scale:

0.0 – 1.9	Poor – funding not recommended
2.0 – 2.4	Modest merit
2.5 – 3.4	Good
3.5 – 4.4	Excellent
4.5 – 5.0	Outstanding

Ranking

A ranking of new UFA candidates relative to all other new applicants or applicants in their peer group should also be provided. This rank can be expressed in quartiles if the GSC doesn’t normally rank all new applicants.

Ranking scale:

Top 76 to 100 per cent – Excellent application	(First Quartile)
51 to 75 per cent	(Second Quartile)
26 to 50 per cent	(Third Quartile)
0 to 25 per cent – Poor	(Fourth Quartile)

6.8.5.9 E.W.R. Steacie Memorial Fellowships

Objectives

The E.W.R. Steacie Memorial Fellowships, named after the late President of the National Research Council (NRC), are awarded annually to enhance the career development of outstanding and highly promising scientists and engineers who are faculty members of



Canadian universities. Up to six fellowships are awarded each year, for a duration of two years.

Description

The fellowship includes a contribution to the university in the amount of \$90,000 per year towards the replacement of teaching and administrative responsibilities, or to enhance the fellow's research environment. In recognition of the honour of the award and the increased time available for research, fellows are eligible to apply for supplemental funding to their Discovery Grant and to submit an application to the Research Tools and Instruments program for equipment funding related to their Steacie research.

Should the recipient of the fellowship already hold another federal award that has a salary component, such as a Canada Research Chair (CRC), University Faculty Award (UFA), or Industrial Research Chair (IRC), NSERC will reduce the contribution to the university to \$30,000 per year.

Policies and Guidelines

GSCs recommend an appropriate level of funding for the two-year duration of the fellowship for those fellows in their discipline. Applications from Steacie Fellows should be reviewed in the context of the fellows' success in a prestigious competition involving extensive international peer review. GSCs are asked to make the following recommendations:

- For fellows renewing their Discovery Grant that year, an amount that would have been awarded as a normal Discovery Grant in the absence of a Steacie Fellowship. The amount recommended as the normal Discovery Grant will come out of the GSC budget. Some fellows will already be on an instalment, not needing a recommendation for their normal grant.
- An amount to supplement the Discovery Grant. Fellows are asked to submit a request for supplementary funding. The full amount of the supplement to the new or currently held Discovery Grant should be for a two-year duration and will come from a special budget allocation, not from the GSC budget.

6.8.5.10 GSC Members

Researchers appointed to GSCs are given the option of extending their Discovery Grant at the same level for the duration of their membership (see Section [1.3](#)). If a member elects to re-apply as scheduled, the review of the member's application will normally take place at the end of the GSC's review of Discovery Grant applications and in the presence of a Group Chair or of a senior NSERC official. Arrangements will be made to ensure that the member does not learn the identity of the internal reviewers. The member will be informed of the GSC's recommendation through a Letter of Notification according to the



usual process for all applicants. Special arrangements should be made with the Program Officer if the GSC Chair is an applicant in the competition.

6.9 Policies and Guidelines

6.9.1 GSC Budgets and Frameworks for Funding Recommendations

The Discovery Grants budget is fixed by Council annually. Once Council has established the global budget, the individual GSC budgets are determined by:

- any changes that Council has approved;
- the results of any reallocation processes; and
- the transfer of grantees among GSCs.

Annual instalments for awards already ongoing are deducted from the GSCs' budgets and the remaining funds are available for competition.

Whenever possible, Council allocates additional funds to the Discovery Grants program to help address the pressure from first-time applicants. These are distributed among GSCs through the use of a formula that takes into account the cost of research, the number of first-time applicants as well as the attrition in each GSC (i.e., grantees expected to return but not returning). *When budget pressures are high, GSCs may not receive additional funds for new applicants, and will be faced with the challenging task of meeting funding targets for new applicants from within their existing envelope.*

The 2007 competition is the fifth and final year that the results of the 2002 Reallocations Exercise will be implemented. Some GSCs will receive funding earmarked for special initiatives put forward by their discipline, and will have a process for distributing these funds.

In exceptional circumstances and with the Director's approval, NSERC will allow GSCs to "save" or "borrow" funds from one competition to the next. This will depend on the current budget situation and what is expected in future years.

Finally, when a grantee's application is transferred from one GSC to another, an amount of money equal to that individual's current grant is also transferred.

Many GSCs rely on a system of mini-budgets allocated to internal reviewers when preparing their initial recommendations. These mini-budgets recognize the fixed budget envelope of the committee, and are usually based on the current funding held by the returning applicants assigned to each internal reviewer, with some adjustments (e.g., for first-time applicants and overall budget variations). These mechanisms help members calibrate themselves in preparation for the competition, help focus the GSC discussion at competition, identify those applications that have widely diverging initial appraisals by



the internal readers, and assist in ensuring that the committee's recommendations are within budget at the end of the competition.

The mini-budget approach must not replace a thorough evaluation by the whole GSC. Although the previous grant level of an applicant is used to establish mini-budgets, it should not influence the determination of the appropriate funding level. Internal reviewers' funding recommendations are to be treated as strictly preliminary and should not curtail the committee deliberations. In other words, the internal reviewers must not have an undue influence over the determination of funding levels by having made preliminary funding suggestions based on their limited pool of assigned applicants.

It should also be noted that, for renewal applications, the previous grant level should not be the only point of reference for deciding on the new level for a renewal grant. Some applications will deserve large increases, for example, if the applicant started or was last reviewed during difficult years. *The total amount recommended may not exceed the total amount requested.*

The Chair briefs members as to the procedures employed by their GSC *for mini-budgets, any reallocation of funding and budget balancing.*

6.9.2 Funding Guidelines for First-Time Applicants and Returning Unsuccessful First-Time Applicants

GSCs have a great responsibility to invest in the renewal of their discipline, since this investment has important consequences for the future.

Funding recommendations for the combined group of first-time applicants and returning unsuccessful new applicants must meet at least two out of three of the following guidelines (see Section 6.8.5 for the categories of applicants):

- The overall success rate for this group must be 50 per cent or more; a lower success rate must be justified by the GSC.
- At least 8 per cent of the competition budget must be allocated to this group.
- The average grant to this group must be at least 70 per cent of the average grant in the GSC.

If selected to receive funding, first-time applicants and returning unsuccessful new applicants must be given a level and duration (normally five years) of funding sufficient to enable them to produce evidence of progress. If grants of shorter duration are recommended, a comment must be prepared providing the rationale for the shorter duration.



6.9.3 Guidelines for Reduced Funding Recommendations

GSCs may reduce or discontinue funding when there are higher priority demands from other equally good or more meritorious research proposals, when an application does not contain sufficient information, in the opinion of the GSC, to allow adequate assessment, or when the criteria of excellence are no longer met. However, such action cannot be taken lightly. The following guidelines for the reduction or termination of grants are to ensure the orderly phase-out of research activities where there is a significant human resource component.

- Grants below the average grant for a GSC may be terminated.
- Grants at or above the average grant for a GSC may be reduced by up to 50 per cent.

GSCs should consider the impact on current training commitments in all cases of significant reduction or termination. Written comments must accompany all recommendations for reduction or termination.

GSCs may request to deviate from these guidelines by making a case to the Program Officer or Group Chair.

- Drastic cuts in grants should not be made for grantees previously reviewed by another GSC. If the GSC truly believes such action is warranted, the case should be discussed with the Program Officer or Group Chair. Written comments for the applicants must accompany such recommendations.
- When reviewing proposals from applicants who were funded as first-time applicants the last time (first renewals), GSCs should ensure that the first granting period has allowed the researcher sufficient opportunity to establish a research program. GSCs should carefully consider the case before cancelling the investment made in the first granting period.

The onus is on the applicant to provide sufficient details to allow the committee to recommend the appropriate NSERC funding level. In situations where insufficient details are provided, either as part of Form 101 – Application for a Grant or Form 100 – Personal Data Form, the committee can recommend a reduced duration, reduced funding or even no funding.

6.9.4 Guidelines for the Funding of Group Applications

When researchers who held individual Discovery Grants apply as a group for the first time, the amount awarded to the group should not be lower than the sum of the awards previously held by the members of the group and should factor in funds for any new applicants. The GSC must justify to NSERC any recommendation for a lower level.



6.9.5 Duration of Grants

Five-year grants are now the norm.

Grants of one to four years can still be awarded under unusual or exceptional circumstances (e.g., the applicant is retiring and has requested a shorter period; the proposal of a new applicant is strong and the GSC believes a higher level of funding may be justified in a shorter term; a proposal is poorly prepared). Remember that when a one-year award is recommended, the applicant will have only about six months to address any problems noted by the GSC, since comments are sent in April and applications are submitted in November.

6.10 Time Commitment

Preparation for the February competition session involves the following:

- Reading in-depth those proposals on which you are an internal reviewer
- Complementing your assessment with the reprints provided
- Reading all other applications so that you will be able to participate in the discussions; some GSCs operate on a “shared workload” basis where each member is required to read only a subset of the proposals
- Integrating referee reports and consultations from other GSCs into your assessment
- Preparing notes on applications, particularly those on which you are an internal reviewer, using the rating form provided at the end of this chapter
- Arriving at a recommendation for level and duration of funding
- Preparing draft comments on cases of reduced or no funding or where a message would particularly benefit an applicant
- Providing your recommendations to NSERC staff or the GSC Chair in advance of competition week

The time required for this preparation is substantial and will vary according to the GSC workload and the workload of the individual member.

You should set a schedule in advance of the competition that allows for a thorough review of all applications, recognizing that a more in-depth analysis is required for internal reviewer assignments. Discussion of an application with other GSC members prior to competition is discouraged. Discreet consultation with colleagues is acceptable, especially when the member’s expertise is remote. This should be done in general terms, without referring to the applicant by name or sharing the application material.

Work sharing

Some GSCs have adopted “work sharing” mechanisms to deal with workload problems. Members read only a subset of Discovery Grant applications. For each application, there



are a few members who are not required to read the proposal and to participate in the discussion and recommendation. Reader assignments are decided in advance and each member is clearly identified as a reader or non-reader on each application.

6.11 Deliverables

6.11.1 Use of Rating Form

An excellent aid for reviewing applications is the rating form provided by NSERC (see attached [sample](#) – a form-fillable version is available on your GSC Extranet). The rating form focuses on the evaluation criteria and integrates, where appropriate, external reviewer comments and any other relevant information (e.g., delays in research). Using the rating form will help ensure that you take all four criteria into account when formulating your recommendation. Once completed, rating forms should be treated as protected information.

6.11.2 Integration of External Reviews, Consultations and Past Message to Applicant

External reviews help provide a deeper overall assessment of an application. External reviewers may be familiar with a particular research area or technique and may be able to comment on an applicant's contributions to the field. GSCs should focus on the content and credibility of external reviews as inputs into the evaluation process, but must ultimately base their recommendations on their own assessments. External reviews contribute to these assessments but must not be used on their own to either accept or reject a proposal (see Section 6.11.3 on preparing draft comments). GSCs should be sensitive to any real or perceived conflict of interest or relationship between the external reviewer and the applicant(s) that might influence the review (professional interactions, potential competition). **These should be brought to the attention of the Program Officer.** GSCs should also recognize that the background of an external reviewer might influence the review (school of thought bias, lack of familiarity with the Canadian granting system).

Consultations are evaluations conducted by a member of another GSC. These are arranged in November at the Chairs meeting when an application is thought to span the boundaries of more than one committee. These should be treated in the same way as a review by an internal reviewer.

Committees have access to the comments on previous Message to Applicant forms. These should be reviewed only at the end of the GSC discussion to ensure that the current GSC is not sending confusing or contradictory messages to the applicant. The GSC may comment on issues raised previously that have or have not been addressed adequately by the applicant.



6.11.3 Preparing Draft Comments and Presentation to the GSC

As there will be little opportunity during the competition session to prepare careful and constructive comments, internal reviewers should prepare, in advance of the competition, draft comments to applicants if they anticipate these being required. These should be discussed in February when applications are reviewed by the GSC and carefully vetted to ensure they represent the committee discussion and consensus. The final version of the communication form provided to NSERC must reflect the comments of the entire committee. The rating form is an excellent tool on which to base the formulation of balanced and helpful comments.

Constructive comments to applicants are of vital importance to enable researchers to improve future applications and/or their research programs. Committees are encouraged to provide constructive, specific and helpful comments to applicants especially in the following cases:

- First-time applicants
- All nil awards
- Any reduction or termination (NSERC **requires** comments for such cases)
- Serious concerns with research productivity, and/or the research proposal
- Applicants from small universities

GSCs should provide comments primarily on those aspects of a proposal that are important in arriving at the committee's recommendation. Both **strengths and weaknesses** are appropriate for comment. The comments should also address any apparent discrepancy between the GSC recommendation and the referee reports in order to provide a clear understanding of the GSC evaluation. The comments should explicitly discuss specific points in external reviews with which the GSC particularly agrees or disagrees if they are a factor in the final recommendations. The comments must be in accordance with NSERC guidelines and appropriate for transmission to the applicant. If at all possible, the GSC should write the comments in the applicant's preferred language.

The following examples are some of the problems sometimes encountered in comments prepared by GSCs:

- Lack of clarity, e.g., it is not clear what message the GSC is trying to give
- Message too general to be of use, i.e., applicant did not rate as highly as others in the competition
- Abusive or belittling language
- Eligibility messages, i.e., we did not recommend funding because applicant should not be eligible. **Note:** This is an NSERC role, not that of a GSC.
- Messages counter to NSERC policy, e.g., GSC did not recommend funding because work is applied or not suitable for its discipline, but suitable for a Strategic Project grant or suitable for CIHR funding



- Messages which appear to be inconsistent with external reviewers' comments without acknowledging those comments and explaining the GSC's rationale

In the past, some appeals have been based on the applicant's perception of an age or gender bias in the recommendation of the GSC. Members must make sure that such biases are not introduced in the review process and that the message conveyed to the applicant does not imply that there were such biases (see Section [5.4.6](#)).

6.12 Rating Form – Discovery Grants Application