



Appendix 5

Policy and Guidelines on the Assessment of Contributions to Research and Training

An important evaluation criterion in any grants program is the excellence of the researcher. Applicants and co-applicants are assessed on the quality and impact of their contributions to research and training over the past six years, and on their stature, knowledge of their fields, and demonstrated expertise.

Contributions to Research

The research process is not complete until the results are validated and transmitted to an appropriate target audience. For many disciplines, the most common and effective means of disseminating results is through the publication of articles in refereed journals. However, other means of dissemination exist, including transfer of technology to Canadian industry, and the onus is on the researcher to select the most appropriate vehicle to ensure maximum impact on the field.

Applicants and co-applicants in engineering and the applied sciences should read NSERC's Guidelines for the Preparation and Review of Applications in Engineering and the Applied Sciences for specific indicators of excellence and research contributions in these fields.

Assessment of Quality

The ultimate tests of quality of any research contribution or publication are its significance and use by other researchers and end-users, and the extent to which it influences the direction of thought and activity in the target community. Evaluation of this, while subjective, is a central element of peer review.

Applicants are asked to indicate their recent contributions on the Personal Data Form (Form 100) and may be asked to provide copies of, or documentation on, some of these contributions for the benefit of reviewers.

To focus the assessment of excellence of the researcher on the quality and impact of recent contributions to research, applicants are asked to identify up to five of their most significant research contributions in the last six years and to explain how these contributions have influenced their field and/or the activities of users.

Selection committees and panels are advised by NSERC to neither rely on numbers of publications in their assessment of productivity nor create or use lists of "prestigious" or "unacceptable" journals in their assessment of quality. The quality of the publication's



content is the determining factor, not that of the journal in which it appears, and the onus is on the applicant to provide convincing evidence of quality.

Forms of Publication

There are many valid types of publications, including: articles, communications, monographs, memoirs or special papers, review articles, conference/symposia proceedings and abstracts, government publications, and reports documenting industrial contributions and contributions to engineering practice. Each type has its place and advantages, and there is much variation between and within disciplines.

NSERC advises its selection committees and panels to evaluate the quality and impact of all contributions and not to regard some as "second class" or "grey literature."

Some fast-moving research fields use special means to reach the target audience quickly. Communications, quickprint reports, letters, and even broad distribution of preprints are important vehicles for disseminating research results.

Contributions to Collaborative Research

Some researchers do most of their work in a collaborative mode. Publications are often prepared jointly with students, postdoctoral fellows, or other research collaborators. Applicants should describe their intellectual contribution to collaborative work or joint publications in their Personal Data Form. The assessment of a researcher's excellence must fully take into account the overall quality and impact of these collaborative activities.

Delays in the Research and in Dissemination of Research Results

From time to time, situations may arise that make it impossible or undesirable for researchers to publish important results of their research prior to reapplying for NSERC support. For example, the time required to complete a monograph may exceed the time available between consecutive applications, or publication may be delayed to allow technology transfer or patent protection.

NSERC recognizes that research productivity may vary during periods of pregnancy or early child care, whether or not a formal leave of absence was taken, or as a result of other personal circumstances. Administrative leave, disability, and other situations may also result in publication delays.

Applicants should clearly and fully describe any circumstances that delay research or affect dissemination of research results in their Personal Data Form. NSERC advises its committees to be sensitive to the impact of these circumstances on the level of productivity while ensuring that the quality of the research remains competitive. Each case is reviewed on its own merit.



Contributions to the Training of Highly Qualified Personnel

Advanced training in science and engineering is an integral part of university research and of NSERC's mission to foster the discovery and application of knowledge. This training contributes to the availability of a highly skilled labour force, capable of thinking critically and creating and applying 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, regardless of the sector in which they are employed. Professionals in science and engineering contribute to our national competitiveness and productivity, as well as to our understanding of the natural and physical environment and ourselves, leading to improvements in the standard of living and quality of life for Canadians.

Training supported by NSERC ranges from undergraduate theses and summer projects to the postdoctoral level and includes technical and other research personnel. The level and content of the 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 encouraging excellent students to pursue research careers. For technicians and others who have been in long-term positions, the acquisition of new techniques and knowledge is an important contribution to training. In collaborative research involving non-university partners, student training may be enhanced by an exposure to an industrial work environment. Similarly, industry personnel can benefit from being involved in academic research.

NSERC also recognizes that not all research is appropriate for training and there will be circumstances when training will be limited. In these cases, the onus is on the applicant to provide an explanation of the absence of a training component.

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. A researcher's contribution to training will be assessed in terms of its quality and impact, and not solely in terms of the number of people supervised.

It is expected that most trainees supported from a grant will produce theses and other high-quality contributions to knowledge, and will move on to professional careers in fields related to science and engineering in all sectors.

The following questions will be used as a guide by selection committees and panels when assessing your involvement in research training:



From information provided on the Personal Data Form

- Have the resulting contributions been of high quality?
- Have the students and other personnel gone on to further research training positions (e.g., Ph.D. program, postdoctoral position)?
- Have the people trained by the applicant gone on to become respected professionals in fields related to science and engineering, in any sector? Examples of professional contributions:
 - transferring new knowledge and expertise from the universities to the Canadian private sector;
 - starting businesses, creating jobs and new economic opportunities;
 - maintaining Canada's international competitiveness in research in science and engineering, renewing our intellectual resources;
 - developing and implementing policies, standards and regulations on issues of national interest; or
 - maintaining and enhancing the national framework for competitive R&D through teaching, administration and research dissemination.
- 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?

From information provided in the application

- Are the projects feasible and appropriate for the training proposed?
- Will trainees be able to make an original contribution to knowledge?
- What opportunity will there be for training in a collaborative or interdisciplinary environment, if appropriate?
- What opportunity will there be for trainees to work with other sectors, if appropriate?

If little or no training is planned, has an appropriate justification been given?