COLLABORATIVE HEALTH RESEARCH PROJECTS

PEER REVIEW MANUAL

2006

INTRODUCTION

This Manual is designed as a Guide for Members of the Collaborative Health Research Projects (CHRP) Selection Panel. It outlines the activities undertaken by the panel members, and describes the policies, guidelines and deliverables relevant to each activity. The overall schedule and important dates are summarized for your convenience. NSERC and CIHR are referred to as the Councils throughout the manual.

Section "1" defines Peer Review and the common principles and practices and its possible pitfalls. It also defines the roles and responsibilities of all involved in the review process of the CHRP proposals including the panel, and NSERC and CIHR staff. Section "2" provides some general information about the CHRP program. The evaluation guidelines including eligible expenses, the overlap with other sources of funds and the definition of the selection criteria for the CHRP program are detailed in section "3". The evaluation procedures including the assignment of applications to panel members, the selection of external referees, the scoring system for the applications, and guidelines on the preparation of comments are covered in section "4".

Samples of the forms that you will receive are provided to you in Appendix "A". Most members of the CHRP panel are appointed from the Canadian academic community and are familiar with the mandate of NSERC and CIHR, their structures and programs. For new members appointed from other sectors detailed information on these can be found on the NSERC web site (www.nserc.gc.ca) and the CIHR web site (www.cihr.gc.ca). The principles and policies on legal and ethical issues adopted by the Councils are covered under Appendix "B". Guidelines are provided to the panel members on the general assessment of publications and productivity in Appendix "C". The indicators of excellence and research contributions for research in engineering and the applied sciences may be significantly different from those in the natural sciences.

Although we have tried to cover most topics, many questions are sure to arise. These should be directed to your Program Officers or the Panel Chair, who will be glad to help.

Program Officers	Dale Dempsey (NSERC) Dale.Dempsey@nserc.ca (613) 947-6374	Kristina Harris (CIHR) Kharris@cihr-irsc.gc.ca (613) 952-4256
Panel Chair	Rob Shipman rshipman@noabbiodiscoveries.com	

PEER REVIEW MANUAL

Overall Schedule and Important Dates

APPENDICES

OVERALL SCHEDULE AND IMPORTANT DATES
2006 COLLABORATIVE HEALTH RESEARCH PROJECTS COMPETITION

May 2	Deadline for submission of Notifications of Intent to Apply for a Collaborative Health Research Project Grant (Forms 182)
May 5	**Orientation Teleconference (NSERC-CIHR Review Panel)**
May 12	• Members receive a Peer Review Manual and a CD containing: - an Excel spreadsheet that includes a list of potential applicants and co-applicants (to help members identify conflicts of interest and level of expertise in reviewing the applications, as well as to provide suggestions for external referees for those proposals they deem fit the program objectives); - a Notification of Intent to Apply for a Collaborative Health Research Project Grant (Form 182); - a description of how the proposed research would address the criteria of the program; - a list of collaborators; and - an additional half-page describing how the project is novel with respect to team and goals, in contrast to earlier projects (provided by previously successful applicants).
May 17 (Deliverable)	Members send an Excel spreadsheet by e-mail that includes: 1. a conflict of interest declaration; 2. the level of expertise in reviewing potential applications; and 3. flagging of any potential projects that may require additional review for Environmental Assessment, ethical, or other reasons.
May 23	• Committee receives assignments and an evaluation spreadsheet (in Excel format) by e-mail.
June 3 **(Deliverable)**	Committee returns evaluation spreadsheet to NSERC
June 13-14	CHRP Teleconference: • LOI evaluation results are reviewed during a meeting with a subset of panel members by teleconference. • Decision about cut-off for invitees is determined.
June 30	• Invitations to submit full proposals are sent to applicants. • Notices of rejection are sent.
September 1	Deadline for progress reports to be submitted to NSERC.

September 5	**New panel members receive:** • Excel spreadsheet containing: 1. links to project summaries; and 2. a place for entering comfort and conflict of interest information. • A CD containing the project summaries and personnel.
September 14	*Progress Reports* Assignments are completed and CDs with full applications, progress reports, evaluation forms and instructions are mailed to members
September 16 (Deliverable)	• New members send conflict of interest and comfort information by e-mail.
October 3	Deadline for submission of applications
October 4 (Deliverable)	**Members send by e-mail:** • progress report evaluations (comments); and • identification of any projects that require additional information or clarification, or that may require termination.
October 19	• Mailing of exhibit book package (CD version) followed by and e-mail of review assignments and preliminary scoring spreadsheet (to be completed and returned to NSERC by January 9).
October 25	**Orientation teleconference:** • Discuss progress reports (where required). • Describe the review process for new members.
October 30	• Notification of the status of progress reports sent to applicants.
December 2	• First package of external reviews sent to committee.
December 7	• Candidates are sent the notices of decision for the third year of funding. • Funding commences after April 1.
December 16	• Second package of external reviews sent to committee Also available on Extranet.
January 3	• Third external package plus ongoing mailing of external reviews.
January 11 (Deliverable)	**Members return preliminary scoring spreadsheets with scores and funding recommendations from the panel members by e-mail or fax.**
Week of January 23-26, 2006	**Meeting in Ottawa to:** • review proposals and make final recommendations within an allocated budget; • prepare a reserve list of recommended awards; • write detailed comments on applications reviewed; and

	• discuss and make recommendations on policy issues.
January 26	• Panel Chair and Program Officer meet to finalize the panel's comments to be sent to applicants.
March 1	Applicants receive: • Letters of Decision; • *Message to the Applicant* forms, when appropriate; and • copies of the external referee reports pertinent to their application.
March	• Report on the competition is finalized.
April 1	• Funding of successful projects commences.

1.0 PEER REVIEW – AN OVERVIEW

1.1 THE PRINCIPLES AND PRACTICES OF PEER REVIEW

Peer review is the principle method for the evaluation of research proposals submitted to the Agencies (NSERC, CIHR). This section of the manual will review the various forms of peer review used and discuss its desirable characteristics. The potential pitfalls will be treated in section 1.2.

A "peer" is defined as a member of the research community, a research manager or research user who is qualified to provide expert advice on some or all aspects of an application for support of R&D activities. Science knows no boundaries, and "peers" are not restricted to being Canadian.

The Agencies' peer review system provides a framework for balanced and equitable peer judgements. This system gives applicants an equal opportunity to state their case and provides for consistent and reflective assessment of proposals against published selection criteria.

Direct peer evaluation is sought in a number of forms, amongst them:

***Through Individuals*:** Individual researchers are approached to be external referees for proposals. Written comments from carefully selected experts are requested by the Agencies, normally for transmission to another peer review body, which will incorporate this advice into its assessment process. This method is used widely across the various grants programs of the Agencies, providing a broad base of advice for the grant selection committees and panels.

***Through Small Ad Hoc Committees*:** Complex proposals for research support are subjected to detailed scrutiny by an *ad hoc* committee (e.g., site-visit committee) specifically constituted to provide a thorough evaluation of the project. The recommendation of such a group is used as "input" to the broader panel evaluation process or directly to Agency staff and advisors in special cases.

***Through Standing Selection Committees or Panels*:** This is the most prevalent mode of peer review within the Agencies, and involves full committee/panel discussion on a spectrum of proposals in a defined research area. Funding recommendations are normally made by consensus within the context of:

- the program objectives, selection criteria and philosophy;
- applicable guidelines and policy;
- the quality of competing proposals;
- the funding constraints.

A single committee or panel will normally have responsibility for a fairly wide jurisdiction in terms of research areas/disciplines.

The Agencies' peer review system, in its multiple forms, operates on the principle of voluntary service in which members of the research and research-related community donate their time for the overall benefit of R&D. Financial compensation is available only to those who find themselves out-of-pocket (e.g., individuals who own their own consulting firms). Voluntary service is considered an important element in protecting the integrity of the peer review system in that it cannot be seen to be driven by personal financial gain.

1.1.1. Peer Review in Dissemination of Results

It is important to add that the peer review process relies heavily on another peer review system - that employed by the editors of scientific journals who assist in publishing the results of researchers. These publications are often a major indicator of quality R&D activity (See Appendix C "*Publications and Productivity*").

Judgments on the quality, significance, novelty and relevance of the research activities are necessarily subjective, hence the need for peer review. The international research community agrees that research results must be subjected to the critical scrutiny of experts in the field to be formally published or disseminated, i.e., validated and made available to the broad user community. This in turn provides the credentials needed for obtaining support for further research.

1.1.2 Peer Review and Impact of Research Activity

In addition to the validation process of publishing, peer review is employed in assessing the extent to which the outcome of the research activity - be it publications or other forms of productivity - has had impact on the target community (other researchers and research users). In the case of more fundamental research, peer review seeks to identify those investigators whose work has changed, in a major way, the thinking and approaches in their research area; for more applied research activities, development of new substances, devices and products, major innovations in engineering practice, design and process (especially when implemented), are the ultimate achievements.

1.2 PITFALLS IN THE PRACTICE OF PEER REVIEW

For all of its strengths and its persistence as the best means of making decisions on the deployment of research funding, peer review is not without its pitfalls and its detractors. Public challenges to peer review are frequently based on small, but real problems that inevitably touch a subjective judgmental evaluation system. To know the potential pitfalls is the first step in protecting the integrity and strengths of the system.

1.2.1 Creeping Conservatism

Given the workload, budgetary pressures, as well as the panels' natural unwillingness to cause offence, there is a tendency towards excessive caution or "creeping conservatism". This may result in an unwillingness to take risks, an unwillingness to cut or to terminate a grant, or more importantly, in a failure to recognize innovation and outstanding potential in a researcher. There is also the temptation to fund many smaller or reduced grants at the expense of more costly research or where full funding might be justified. There is a perception that risk taking is not encouraged and the system promotes safe research. We have to make sure this is not true. Each selection panel member must analyse his/her own performance.

1.2.2 Canadian Science - Is It Outstanding?

With the "demand" for funds outpacing "supply," the resulting success rates are usually low. As a result, each panel member is seeking to identify shortcomings in a proposal, and to find reasons to say "no," sometimes resulting in an environment that is hostile to praise of scientific and engineering achievements. A balanced approach must be maintained and the outstanding Canadian researchers and projects suitably recognized. Canada can and does produce outstanding researchers and research.

1.2.3 Bias

“School of thought bias” can be based on several things: fundamental vs applied research, areas not in the mainstream of the discipline, size or repute of universities, age, personal or gender bias. How often have researchers heard the challenge of bias in peer review systems of journals and funding agencies? What is perception and what is more reflective analysis of fact?

Members must constantly guard against the possibility of hidden bias influencing the decision-making process. There is one area where the Agencies do find it necessary to caution panel members against ingrained "prejudices" - that is any **a priori** judgment of individuals by the size of their university or the size of their research grant. Good research can be carried out at a small university and mediocre research at any size of institution. The Agencies do not differentiate between academic institutions on the basis of size or the existence (or lack thereof) of a graduate school. Likewise, two researchers of comparable stature and track record do not receive the same level of funding if they are working in areas with significantly different costs of research. The message is that the size of the research grant should not be used as an automatic measure of a researcher's stature in the research community.

1.3 THE ROLE OF THE COLLABORATIVE HEALTH RESEARCH PROJECTS (CHRP) SELECTION PANEL

The Collaborative Health Research Projects selection panel is appointed by NSERC and CIHR to provide funding recommendations within specified policies and budgets of the program. The panel has the full responsibility of making scientific assessments and reviews based on the program selection criteria and in the context of the program objectives as outlined in Chapter 2. Only in situations involving a violation of the Agencies' guidelines or an "unfair" evaluation will a recommendation be overturned.

The panel does not make decisions on matters of applicant eligibility, e.g., an applicant's academic position. The Agencies depend on panel members' expert advice for flagging and recommending cases for investigation. Agency staff are responsible for final decisions on eligibility.

1.4 SPECIFIC RESPONSIBILITIES

1.4.1 Panel Chair

The "role" of a panel chair carries with it a number of responsibilities; many interactions with the Agencies are also an inevitable consequence of the job. The responsibilities include:

- Having knowledge of the policies affecting the procedures of the Selection Panel;
- overseeing the assignment of internal and additional external reviewers as required;
- maintaining a high quality of peer evaluation. This includes ensuring the consistency and equity of approach during the teleconference calls and the peer review meeting;
- chairing of the peer review meeting; ensuring the orderly and complete evaluation of the applications and the transmission of accurate recommendations to NSERC and CIHR. The process includes ensuring that all important aspects of proposals are considered and that a panel consensus is reached for all applications;
- co-ordinating the preparation of comments to the applicants during the peer review meeting and ensuring that these comments reflect the full panel consensus and not the views of a single member;
- spokesperson for the selection panel in dealings with the Agencies on policy issues, new emerging areas of research, particular problem areas, etc. This includes the submission of an annual *Report on the CHRP Competition*;
- reference source for new panel members, as required.

In addition to the preceding points, a few general comments are in order.

The work of a panel chair, like that of an Agency staff member, is a delicate balance of advocate of, advisor to, and critic of, the Collaborative Health Research Projects selection panel. The panel chair and Agency staff work in concert to assist "the system" to evolve and change by monitoring the quality of peer review and development of policy guidelines.

1.4.2 Selection Panel Members

Acceptance of a term as a selection panel member brings with it a commitment to participate in the evaluation of all applications assigned to the panel within guidelines established by the Framework for Tri-Council Review of Institutional Policies Dealing with Integrity in Research Agencies and according to the practices of that panel. The core responsibilities of a panel member are:

- attending the annual evaluation meeting;
- participating in the teleconference calls, which involves a policy discussion of the evaluation process;
- participation in the LOI relevancy review;
- reading all applications in the exhibit books in preparation for the evaluation meeting;
- providing suggestions for external reviewers, as required;
- providing in-depth evaluations for a **subset** of applications;
- assessing final reports assigned by staff for review;
- completing in detail the "Panel Rating sheet" and the comments to the applicant(s) for those applications for which the member is first reviewer. The comments should reflect the full panel consensus;
- responding to staff requests for additional comments after competition week if further information is required;
- adhering to the Agencies' regulations on conflict of interest, communication with applicants, and confidentiality;
- suggesting potential panel members for future competitions.

1.4.3 NSERC Program Officer

The main responsibilities of the NSERC Program Officer as a member of the panel are:

- acting as a liaison between the panel and the Agencies;
- advising the panel on the Agencies' policies, guidelines and procedures;
- assisting the panel chair in preparing for and organising the teleconference call and the peer review meeting;
- helping ensure, on an ongoing basis, consistency in evaluation of all applications assigned to the panel;
- bringing any problem areas or cases to the attention of the panel chair;
- serving as the "panel memory". The Program Officer brings relevant documentation to the attention of the panel to aid it in its deliberations;
- ensuring that panel members complete the "Panel Evaluation Report" and, in collaboration with the chair, checking the validity of comments prepared by the panel;
- ensuring that funding recommendations (level and duration) are accurately recorded;
- taking note of any special recommendations or conditions of awards;
- ensuring that the recommended awards conform with the budget allocated and with policies and guidelines of the CHRP program;
- transmitting the panel's recommendations (both financial and policy) to the Agencies;
- advising the Agencies on specific problems within the panel's scientific/engineering and health areas;
- ensuring consistency of approach (e.g., use of referees, funding policy) from year to year, and documenting changes;
- preparing, in consultation with the panel chair, the *Report on the CHRP Competition*;
- preparing the panel membership and chair recommendation.

The NSERC Program Officer is a panel member but **does not have voting rights on the panel**. He/She should not be assigned as an internal reviewer for applications, but is encouraged to play an active role in other aspects of the panel work.

1.4.4 NSERC and CIHR Staff

Members of the Collaborative Health Research Projects selection panel may interact with staff from all sections of NSERC, and with representatives of CIHR during their tenure on the CHRP panel; the vast majority of these interactions will, however, be with the staff of the Collaborative Health Research Projects Team.

Collaborative Health Research Projects Team

Primary Program contact (NSERC):
Dale Dempsey
Program Officer
(613) 947-6374
Dale.Dempsey@nserc.ca
Fax: (613) 992-5337

Primary Program contact (CIHR):
Kristina Harris
Program Delivery Officer
(613) 952-4256
KHarris@cihr-irsc.gc.ca
Fax: (613) 954-1800

Support Staff

Colleen Daly
Program Assistant, NSERC
(613) 996-9814
Colleen.Daly@nserc.ca

Karen Payette
Program Assistant, NSERC
(613) 947-6365
Karen.Payette@nserc.ca

2.0 COLLABORATIVE HEALTH RESEARCH PROJECTS (CHRP) PROGRAM DESCRIPTION

Note: The information presented in this section is available on the NSERC website at www.nserc.gc.ca/index.htm

2.1 CONTEXT

In its 1999 budget, the federal government announced the formation of the Canadian Institutes of Health Research (CIHR), to begin in 2000. In the same year, NSERC launched three programs to assist its grant holder community to prepare itself for the multidisciplinary research that would be supported by the CIHR. One of these initiatives was a special program to support research in areas closely related to the mandate of the CIHR, the initiative was named the Collaborative Health Research Projects program (CHRP)

In 2001 NSERC renewed this successful program and in 2003, NSERC and the CIHR agreed to jointly fund the CHRP program in order to increase the opportunities for collaboration between researchers from both communities.

2.2 OBJECTIVES

In the context of improved health for Canadians, the objectives of the Collaborative Health Research Projects (CHRP) program are to:

- **translate** research results to end users/stakeholders (the mechanism for translation must be clearly described);
- encourage the NSERC and CIHR communities to collaborate and integrate their expertise and research activities;
- advance interdisciplinary research leading to knowledge and technologies useful for improving the health of Canadians;
- train highly qualified people in collaborative and interdisciplinary research of relevance to health.

2.3 DESCRIPTION

The CHRP program supports focused collaborative research projects involving any field of the natural sciences and engineering, and the health sciences. If successful, the projects will lead to health benefits for Canadians, more effective health services, or economic development in health-related areas. The proposed project may range from fundamental knowledge creation to research on knowledge application relevant to industry or public policy. Typically, support will be for up to 3-years for defined projects with milestones, a beginning, an end and clear decision points.

The participation of two or more independent researchers with complementary expertise is required. Team composition must include expertise in the natural sciences and engineering, and in the health sciences. New and genuine collaborations between researchers in the natural sciences and engineering, and medical researchers, clinicians, social scientists and humanists are strongly encouraged. The onus is on the applicant to clearly demonstrate that the assembled research team under the leadership of the principal investigator collectively has the necessary expertise for successful execution of the project. Co-applicants from other sectors (e.g., government and industry) and foreign researchers are welcome to participate, but are expected to bring their own resources to the project. While the participation of partners from outside the academic sector is not required, applicants are strongly encouraged to form linkages with relevant users and stakeholders.

Applicants and co-applicants applying to receive funds must hold eligible appointments at a Canadian postsecondary institution and these must take effect no later than April 1 following the year of the application.

2.4 REVIEW PROCEDURES AND SELECTION CRITERIA

Peer review of the applications will occur in two distinct phases.

Phase 1: The letters of intent will be screened by the CHRP panel against the ***objectives*** of the CHRP program listed in section 2.2.

Phase 2: General criteria for assessing full applications are listed below and described in detail in section 3.5.

External reviewers and an interdisciplinary selection panel will evaluate all applications. The onus is on the applicant to address the evaluation criteria explicitly in the proposal.

- Impact and potential for the translation of the results into improved health for Canadians, more effective health services and economic development, including a plan for the communication of the results to the appropriate users, stakeholders and segments of the health care sector.

- Quality of the research project.

- Appropriateness of the Team and Management, including the team's leadership and the integration of team members

- Contributions to training in collaborative research and to providing trainees with an understanding of the impact of the research on human health

2.5 APPLICATION PROCEDURES

Note: Continuing research programs on the same topic are not, at present, being identified as appropriate for funding.

Applying to the CHRP program involves two phases and this process is described below.

Phase 1:

A letter of intent must be submitted by May 2, 2005. The letters of intent will be used to screen for fit to the ***objectives*** of the CHRP program and to set up the appropriate expertise on the peer review panel.

A limited number of applicants whose projects are determined to best fit the CHRP program objectives will be invited to submit complete applications by the deadline date of October 3, 2005.

A letter of intent consists of a Form 182 that includes:

- A **cover page** including the title of the proposal, the name and contact information (full address, e-mail and phone number) of the Principal Investigator (applicant), Research subject code(s) and key word(s) that best describe the research proposal;
- A **research summary and an estimate of the annual funding to be requested**, maximum one (1) page;
- A **list of co-applicant(s)** and their institution(s), maximum one (1) page; and
- A **list of external referees**.
- A description of how the proposed research would address the **objectives of the program**, maximum of one (1) page.
- A **list of collaborator(s)** and their institution(s).
- Previously successful applicants must include an additional half-page describing how this project is novel with respect to team and goals (in contrast to earlier projects).

Mechanism for reviewing the Letters of Intent

During the screening process, the LOI (Form 182) will be evaluated using the program objectives and applicant information as the criteria for gauging fit to program, as described in the program description. The process is described in point form below.

1. Each Form 182 is assigned to 2 panel members for review – a summative YES or NO response is required from each reviewer for each LOI.

2. For the LOI to receive a YES from a panel member, a YES must be given for **each evaluation criterion**. Failure to receive a YES on any criterion will result in a summative NO for the LOI in question.

3. Panel members can allocate any proportion of YES or NO votes, but if they give a YES vote they must include a score ranging from 1.0 to 10.0.

   Where

   _____
   10.0
   9.0
   8.0 Strong support
   7.0

   _____
   6.0
   5.0 Medium support
   4.0

   _____
   3.0
   2.0 Low support
   1.0

4. Panel members must also include a short statement in the "Explanation" section of the review sheet stating why they have allocated a summative YES or NO to the LOI being reviewed.

5. Only double YES are retained.

6. The double YES results are then compiled and an average score is produced and used to rank each LOI;

   For example:
   (1) Yes 7.7 and Yes 9.4 = an average score of 8.55
   (2) Yes 4.0 and Yes 5.5 = an average score of 4.75 and would rank below (1)

7. Once the final ranking is in place, the top applicants will be invited to submit a full application. The number of applications to be accepted will be determined by the chair of the committee in collaboration with members of NSERC and CIHR.

Only full applications, which have been invited, will be considered for funding through the CHRP program.

Phase 2:

The full application must include the following:

1) An NSERC Application for a Grant (Form 101). Requests for any equipment must be incorporated into the research proposal. Applicants must justify the need and urgency for the equipment to effectively conduct the research.

2) An NSERC Personal Data for (Form 100) for the applicant and each co-applicant is required. A CIHR CV module for the applicant and each co-applicant will be accepted.

Resubmissions: An applicant who was unsuccessful in one competition may resubmit the same or similar application in a subsequent competition. The applicant, however, must include a one (1) page response to any previous committee comments with the resubmission.

Previously successful applicants must include the additional half-page, submitted with the letter of intent, describing how this project is novel with respect to team and goals (in contrast to earlier projects).

2.6 REPORTING

All recipients of three-year grants in this program must submit a progress report (**maximum 7 pages, 2 copies**) during the second year of their grant. The evolution of the interactions with the health community or sector during the project must be explained in the progress report. Payment of the third and final installment of the grant is contingent upon satisfactory progress. All grantees are advised of the requirements for and timing of such reports.

Ninety days following completion of the project, all grantees must submit a final report on the project's achievements with respect to its objectives (maximum 10 pages, 2 copies).

3.0 REQUIREMENTS AND EVALUATION GUIDELINES

3.1. NATURE OF THE PROPOSALS SUPPORTED

The Collaborative Health Research Projects (CHRP) program is open to a broad spectrum of activities, ranging from investigations whose importance flows from the intellectual structure of the discipline to the solution of problems suggested by social and industrial needs.

However, proposals must:

- involve at least two independent investigators;
- involve teams that have expertise in the natural sciences and engineering and in the health sciences;
- be a defined research project and not a research program;
- the project must have an interdisciplinary character;
- lead to health benefits;
- provide a mechanism for the translation of research results.

3.2. ELIGIBLE EXPENSES

The Agencies fund the direct costs of research. Administrative costs or indirect costs of research are not eligible expenses for this program. For a complete list of allowable expenditures, please refer to the NSERC and CIHR web sites.

CHRP funds may be used to pay the direct costs of research, such as:

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

3.3 EQUIPMENT REQUESTS

Requests for any equipment must be incorporated into the proposal. Applications must justify the need and urgency for the equipment to carry out the project.

The equipment, regardless of cost, should be listed as a line item in the budget of the application and must be justified along with other budget items on separate pages. Requests for equipment are eligible for funding provided the equipment is essential for the conduct of the project. The applicant must provide a minimum of two recent quotations for equipment or equipment systems costing more than $25,000.

3.3.1 Partial Equipment Recommendations

In evaluating any equipment request, the budget should be examined critically as not all equipment items may be justified. Panels have the flexibility to recommend partial funding of equipment requests. Reduced amounts may be recommended for certain items of equipment, but revised figures must be based upon recently acquired quotations or a panel member's firm knowledge of recent quotations. Panels should also ensure that, when reduced equipment funding is recommended, the recommended equipment is sufficient to accomplish the proposed research objectives within the identified time frame.

3.4 OTHER SOURCES OF FUNDS

The possession of other sources of support should not be a reason to deny or limit access to CHRP grants unless there is convincing 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 value of the research project to the research and/or user community. However, members must be careful not to equate level of funding with stature and excellence. 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.

3.4.1 Overlap with Other Sources of Funds

There are various sources of funding available for each discipline. Other sources of funds include other NSERC or CIHR programs, government, industry and private sources. The Agencies do not restrict researchers from obtaining other sources of funding, but do expect that there will be no duplication of funding for the same research project.

Applicants must provide clear and concise information on the relationship (conceptual and budgetary) or lack of relationship of the proposed research to all currently held or applied for support. They must also explain perceived duplication in funding or, if applicable, indicate how the CHRP 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 CHRP application.

The onus is on the applicant to describe both the conceptual and budgetary relationships (including salaries) of the proposed research to currently held or applied for support (e.g., industrial contracts, provincial and federal agency support). The applicant must provide sufficient information to the panel. <u>If the information provided is inadequate to make this assessment, the panel may recommend reduced or no funding.</u>

3.5 EVALUATION CRITERIA FOR FULL APPLICATIONS

- **Impact and potential for the translation of the results into improved health for Canadians, more effective health services and economic development, including a plan for communicating the results to the appropriate users, stakeholders and segments of the health care sector.** This includes the anticipated impact of the proposed research on the health of Canadians, the importance of the proposed health issue, demonstrated potential for translation of results and their significance to the health care sector, and a plan for translation to relevant target audiences or health care segments.
- **Quality of the research project.** This includes the originality of the project; clarity/scope of objectives; methodology; feasibility.

- **Appropriateness of the team and management, including the team's leadership and the integration of team members.** This includes the knowledge, expertise and experience of researchers; quality of, or potential for, contributions of the team members; complementarity and synergy of the expertise of the team members; appropriateness of the management of the project; co-ordination and integration of activities; contribution and time-commitment of participants; and clarity of roles and responsibilities.

- **Contributions to training in collaborative research and to providing trainees with an understanding of the impact of the research on human health.** This includes the quality and extent of past and potential contributions to collaborative training in the health context (e.g., opportunity for trainees to spend time in different laboratories or settings), the training environment, and evidence and scope for continued training.

The committee will also consider the appropriateness and justification for the budget in their final recommendations.

3.6 REVIEW OF PROGRESS REPORTS

Payment of the third installment of a 3-year CHRP grant is dependent upon demonstration of satisfactory progress of the research project. For the purpose of this evaluation, recipients of 3-year grants are required to submit a brief progress report to NSERC approximately 18 months after the grant is awarded.

NSERC and CIHR staff assign each progress report to 2 panel members who are responsible for reviewing the progress of the project relative to the milestones as described in the original proposal and making a recommendation to the Agencies. The panel members then submit their comments to NSERC. Based upon these comments, payment of the third installment is made in accordance with the following options.

- payment of the third installment as scheduled, with or without comments to the grantee, at the discretion of the panel;

- reduction of the scheduled amount, either because the grantee does not need the full level of support scheduled or because progress on certain aspects of the research is not satisfactory;

- phase-out of the grant because the progress is not satisfactory. This should only occur under unusual circumstances. It should be recognized that some research projects won't proceed exactly as originally envisioned. However, the report should clearly demonstrate that appropriate steps have been taken to address the problems encountered. Ultimately, if a phase-out is being recommended, NSERC staff will negotiate a terminal installment in order to assist in the orderly phase-out of the research personnel employed under the grant and the payment of committed expenditures. CIHR does not contribute to terminal installments;

- postponement of the installment release, because an updated report or additional information is required for the panel to assess the progress made in the project.

4.0 EVALUATION PROCEDURES

4.1 ASSIGNMENT OF APPLICATIONS TO PANEL MEMBERS

Each eligible application will be assigned to three internal reviewers (i.e., panel members). All reviewers will have expertise as close as possible to the subject area of the project (conflicts of interest being avoided). Members will be asked to identify that they feel qualified to review. NSERC and CIHR staff and/or the panel chair make initial assignments of internal reviewers after review of the letters of intent.
Any inappropriate assignments, due to conflicts of interest or other reasons, should be brought to NSERC's attention immediately in order to allow sufficient time for reassignment and review. Appendix B - *Legal and Ethical Issues* provides details on what is considered to be a conflict of interest situation. Members in conflict of interest should not be assigned to review the application.

4.2 HOW TO HANDLE PROPOSALS WHEN PANEL EXPERTISE IS THIN

It is inevitable that the panel will be assigned some proposals in areas where the resident expertise is thin or peripheral to the main thrust of the proposal. As well, it is possible that conflict of interest regulations create a gap in expertise.

The following procedure is recommended to ensure adequate evaluation of the occasional problem case:

i) When expertise is thin, identify five external referees who can provide in-depth coverage of the content of the proposal.

ii) When there is a gap in expertise, seek **comparative** written referee assessments from at least ***three individuals*** who have in-depth knowledge of the area. Pose specific questions to assist the panel in its assessment.

The above procedures should be arranged through the NSERC Program Officer with as much advance notice as possible.

4.3 SELECTION OF EXTERNAL REVIEWERS

Each application is sent to four external reviewers who are asked to provide a written evaluation of the proposed research on the "Referee Report".

Applicants are required to provide, attached to their applications, the names and complete mailing addresses of up to five persons who could evaluate their research proposal. While it is the primary reviewers' responsibility to suggest names of external reviewers for their assigned applications, NSERC staff may contact secondary reviewers for additional names on certain applications. Also, secondary reviewers may choose to suggest names of reviewers

whose expertise would be specifically beneficial in the review of certain applications.

An NSERC referee data bank will be available for members who request it. However, it should be noted that this should be used as an extra resource and not the sole source in selecting reviewers. Also, recommended external reviewers frequently include one or two persons suggested by the applicant, but should not be limited to those suggested.

4.3.1 Guidelines on External Referee Selection

Referees **must**:

© be of equal or higher scientific stature;

© be from the user sector as well as the university sector;

© have the appropriate expertise to comment with confidence;

© have the linguistic skills to review the application.

Referees **may be**:

© research managers who have active researchers on their staff who could evaluate the application;

© from Canada or abroad;

© found among authors cited in the literature review in the application.

Referees **should not:**

© be from the same university, department or research group as the applicant(s);

© be a former research supervisor or graduate student of the applicant(s);

© have published with the applicant(s) (look at the personal data listing);

© be competing for the same budget (i.e., an applicant to the same panel in the current competition);

© be a supporting organization contact of an application in the competition;

© be the author of a letter in support of the application in the competition;

© be in any potential or perceived conflict of interest;

© be cited by the applicant(s) to be in potential conflict (such requests are respected by NSERC provided this does not prevent adequate evaluation of the submission);

© be assigned more than **3** proposals for review.

4.4 EVALUATION PROCESS

Members are responsible for the thorough review of the applications assigned to them. Members are also encouraged to read the other applications (except in cases of conflict) in preparation for the peer review meeting. Panel members will receive external referee reports to assist in the comparative evaluation of the proposals assigned to them.

4.4.1 Integrating External Referee Reports in the Review Process

Comments of external reviewers should not be taken at face value and should be carefully scrutinized before acceptance or rejection. Care should be exercised when the relationship between the applicant(s) and the reviewer is less than arm's length, or if it is suspected that the reviewer may have a reason for being overly harsh (close competitor or different school of thought) or lenient (reviewers who come from a system where anything less than an "A rating" is cause for rejection). External reviews should not, however, be discounted simply because panels think that an external reviewer has a relationship with the applicant but lack hard evidence to support this. In such cases, members should focus on the content and credibility of the external reviewer's report rather than on the nature of the supposed relationship between the reviewer and the applicant.

4.4.2 Scores for the Applications

Deliverable: Panel members will forward to NSERC (by e-mail or fax), **one week** ahead of the peer review meeting, i.e., January 9, the scores and funding recommendation (full or partial) for the proposals assigned to them, using the Microsoft Excel *Reviewer Assignment Sheet*. When recommending a funding level please refer to section 4.4.3, funding recommendations.

Each application is rated on a 5-point scale with one decimal value allowed. Panel members are encouraged to use the full range of the rating scale for their set of applications.

Rating Scale. The CIHR rating scale will be used

	Range	**Range Descriptors**
Fundable:	4.5 - 4.9	outstanding
	4.0 - 4.4	excellent
	3.5 - 3.9	very good
Seldom funded:	3.0 - 3.4	acceptable, but low priority
Not fundable:	2.5 - 2.9	needs revision
	2.0 - 2.4	needs major revision
	1.0 - 1.9	seriously flawed
	0	rejected

Use the rating scale provided to assign an overall score on the application.

4.4.3 The Peer Review Meeting Deliberations

At the peer review meeting, the panel will discuss and finalize the scores and funding recommendation for each proposal. The selection panel will rate and rank all the applications and provide NSERC with a final prioritized listing. Selection committees must ensure that all applications receive a full and detailed evaluation regardless of the official language of presentation. In accordance with its active offer of bilingual service to the public, upon request, NSERC will provide the service of simultaneous translation for the CHRP selection panel during the meeting. **Panel members who wish to make use of this service should advise NSERC well in advance of the meeting to allow for the preparations**.

Funding recommendations: To be eligible for funding, an application must receive a high overall ranking: e.g., an outstanding researcher submitting an excellent proposal on a project that is judged to have a "questionable" potential for translation of the results into improved health for Canadians should not be recommended. Similarly, a proposal of marginal scientific merit should be turned down, even if the applicant(s) has successfully attracted the participation and support of the appropriate segments of the health care sector.

If a project is eligible for funding and the amount granted is less than the amount requested, the panel should specify in its evaluation report/comments the budget items or sub-projects that have been reduced or eliminated and provide the reasons why this has been done.

4.4.4 Review of Applications Submitted by Panel Members

Applications submitted by a panel member must be reviewed after the assessments of all other applications have been completed. The panel member/applicant must not be present at the time of the review and the scores for that application must be concealed from him/her.

4.4.5 Comments Prepared During the Peer Review Meeting

Panel members are expected to read **all** applications prior to the meeting and should prepare preliminary comments on the *Panel Rating Sheet* for all those applications assigned to them as primary and secondary reviewers. **The final version of the comments must reflect the comments of the entire committee.**

The primary reviewer is responsible for drafting the final comment. However, it can only be completed after the panel discussion of the application and when a consensus is reached. Time permitting, NSERC staff will have them typed and returned during the meetings for approval.

The Chair, in conjunction with the Program Officer, is responsible for ensuring that the comments represent the panel consensus and are ready to be released to the applicants. This is usually done at the end of the panel meetings. The Chair should initial the final versions. The information on these forms will be transferred onto a *Message to Applicant* form that will be sent to the applicant along with the letters of decision.

4.4.5.1 Guidelines on the Preparation of Comments

The comments should:

- reflect the panel's discussion **of the Evaluation Criteria (Section 3.5)**;
- *address any apparent discrepancy between the panel recommendation and the External Referee Reports in order to provide a clear understanding of the panel's evaluation;*
- outline the conditions of award, if any;
- indicate partial equipment recommendations if any;
- give reasons (justify) for any reductions in the budget recommendations.

The panel is encouraged to provide constructive, specific and helpful comments/criticisms to applicants where possible. Such comments are of vital importance to researchers providing them with the rationale for the panel decision and the feedback necessary to improve future applications and/or their research projects. Panels should provide comments primarily on those aspects of a proposal that were important in arriving at the panel's recommendation. Both strengths and weaknesses are appropriate for comment. The comments should also address any apparent discrepancy between the panel recommendation and the referee reports in order to provide a clear understanding of the panel evaluation. If at all possible, the panel should write the comments in the applicants' preferred language.

Panel members should be aware that written opinions and comments on applications to the Agencies are accessible to the applicant under the federal Privacy Act. The same law protects the names of those who provide written reviews of certain federal grant proposals. This enables Agency staff to remove the author's name and affiliation from comments before sending them to applicants.

The following are examples of problems sometimes encountered in comments prepared by panels:

- lack of clarity, e.g., it is not clear what message the panel is trying to convey;
- failure to address the program selection criteria used in the evaluation;
- lack of sufficient detail or message too general to be of use, e.g., "applicant did not rate as highly as others in the competition";
- abusive or belittling language;
- eligibility messages, e.g., "we did not recommend funding because the applicant should not be eligible" (**Note**: this is an NSERC role, not that of a panel);
- messages counter to the agencies' policies.

4.4.6 Policy Meeting

The panel will hold a policy meeting following their deliberations and funding recommendations. The policy meeting generally includes a discussion of the quality of applications, improvements to the review process, competition logistics, funding pressures, hotel accommodations, the Agencies administrative services, policies, etc.

4.5 CONFIDENTIALITY OF RECOMMENDATIONS

All funding recommendations are subject to approval by NSERC and CIHR, and may be changed for reasons of budget, administrative error or lack of full adherence to policies of the Agencies.

Details of the discussion on a specific applicant are confidential and must <u>not</u> be divulged to others. Release of such information to the applicant <u>must</u> be done through the Agencies.

<u>Under no circumstances</u> should members divulge recommendations emanating from the competition. NSERC and CIHR will announce the decisions following approval by both Agencies.

4.6 REPORTING OF SUCCESS STORIES

The Agencies consider it important to highlight the impacts and contributions made through its programs. The nature of the research supported by CHRP makes it amenable to this type of reporting. Success stories arising from CIHR and NSERC-funded research in Canadian universities provide the Agencies with an effective means to communicate to the general public, members of parliament, senior government officials, industry, etc., in lay terms, about

the important contributions that university research is making to our health care development and progress.

The panel is asked to identify individuals and/or projects that appear to be potential success stories with significant impact. Examples submitted by the panel may be used for communiqués, briefing notes to ministers and other publicity material.

APPENDIX A

Samples

- **PANEL RATING SHEET**
- **LOI ASSESSMENT FORM**

Panel Rating Sheet – Collaborative Health Research Projects

Applicant	Department/University	Committee 360

Short Title of Proposal	Amount Requested	Year 1 $
		Year 2 $
		Year 3 $

EVALUATION CRITERIA	**Comment on strength and weaknesses (See Chapter 3 of the Peer Review Manual)**
Impact and potential for the translation of results into improved health, more effective health services, economic development. Plan for communication of Results to appropriate users, stakeholders, segments of the health care sector • Anticipated impact of results to the health care sector; importance of the proposed health issues; • A plan for the communication of the results • Plan for translation of results to relevant target audiences/sectors; **Quality of the Research Project** Originality of project; clarity/scope of objectives; methodology; feasibility; budget. **Appropriateness of the team and management, including the team's leadership and the integration of team members.** • Knowledge, expertise and experience of researchers; quality of, or potential for, contributions of the team members. • Complementarity and synergy of the expertise of team members; • Appropriateness of the management of the project; co-ordination and integration of activities; • Coordination and integration of activities; contribution and time-commitment of participants; and clarity of roles and responsibilities.	

Contributions to training in collaborative research and to providing trainees with an understanding of the impact of the research on human health.	
• Quality and extent of past and potential contributions to collaborative training in the health context (e.g., opportunity for trainees to spend time in different laboratories or settings); • Training environment; • Evidence and scope for continued training	

Budget • Is the budget appropriate and justified	Comments

Comments From External Referees:

Other Comments (e.g., special circumstances)

Summary:

Funding Recommendation: $

Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

COLLABORATIVE HEALTH RESEARCH PROJECT

LOI ASSESSMENT FORM

SUBVENTION DE PROJET DE RECHERCHE CONCERTÉE SUR LA SANTÉ

FORMULAIRE D'ÉVALUATION DES L'ETTRES D'INTENSION

Applicant/Candidate	Application number / Numéro de la demande	Date
Project Title/Titre du projet	Panel Code/Code du comité **360**	Research Area/Domaine de recherche

1. Evaluation check list / liste de vérification aux fins de l'évaluation
Indicate whether or not the proposed research meets the following program objectives / Indiquez si le projet proposé répond aux objectifs suivants.

Meets eligibility criteria / Répond aux critères d'admissibilité	**Program eligibility criteria / Critères d'admissibilité du programme**
☐**YES/OUI** ☐**NO/NON**	Involves an investigator who has experience in the Natural Sciences and engineering sectors /Fait appel à la participation d'un chercheur ayant de l'éxperience dans les domaines des sciences et du genie.
☐**YESOUI** ☐**NO/NON**	Involves an investigator who has experience in the Health sector / implique la participation d'un chercheur ayant de l' éxperience dans le domaine de la santé.
☐**YES/OUI** ☐**NO/NON**	Is a novel research project and not an existing research program / Le projet constitue un programme de recherche novateur et non un programme de recherche existant.
Addresses the objectives / Répond aux objectifs	**Program objectives / Objectifs du programme**
☐**YES/OUI** ☐**NO/NON**	**translate** research results to end users/stakeholders (the mechanism for translation must be clearly described) **/** assure le **transfert** des résultats de la recherche aux utilisateurs et aux intervenants (le mécanisme de transfert doit être clairement expliqué).
☐**YES/OUI** ☐**NO/NON**	encourage the NSERC and CIHR communities to **collaborate** and integrate their expertise and research activities **/** encourage les chercheurs du CRSNG et des IRSC à **collaborer** et à intégrer leur expertise et leurs activités de recherche.
☐**YES/OUI** ☐**NO/NON**	advance **interdisciplinary research** leading to knowledge and technologies useful for improving the health of Canadians **/** faire avancer la **recherche interdisciplinaire** débouchant sur des connaissances et des technologies utiles pour améliorer l'état de santé des Canadiens.
☐**YES/OUI** ☐**NO/NON**	**train highly qualified personnel** in collaborative and interdisciplinary research of relevance to health **/ former du personnel hautement qualifié** en recherche concertée et interdisciplinaire dans le domaine de la santé.

2. Explanation of summative mark/ Explication de la note sommative

3. Invitation to submit a full proposal/ Invitation à soumettre une demande de subvention.

☐ **YES/OUI Invite full application / Invitation a soumettre une demande complète**

☐ **NO/NON Does not meet program objectives / Ne répond pas aux objectifs du programme**

Score / Points _____ If your selection is Yes / Si votre choix est Oui

Rating Scale / Échelle de cotation

10
9 Strong support / appui fort
8
7
_____
6
5 Medium support / appui moyen
4
_____
3
2 Low support / appui faible
1

4. If choice is (YES), please provide 3 to 5 external reviewers in the table below. / Si vous avez coché la case <OUI>, veuillez inscrire ci-dessous les noms de trois à cinq évaluateurs.

	Name/ Nom	Affiliation/ Affiliation	Phone / Téléphone.	Email / Courriel
1				
2				
3				
4				
5				

5. Project clearly aligned with the mandate of a single agency / Projet cadrant clairement avec le mandat d'une seule agence.

☐ **Could this project be funded by the CIHR only? Ce projet pourrait-il être subventionné seulement par les IRSC?**
Which Program(s) / Quel(s) programme(s)_____

☐ **Could this Project be funded by NSERC only / Ce projet pourrait-il être subventionné par le seulement par le CRSNG ?**
Which Program(s) / Quel(s) Programme(s)_____

Name of NSERC staff person processing the information / Nom du member du personnel du CRSNG assurant le traitement des renseignements_____

APPENDIX B

LEGAL AND ETHICAL PRINCIPLES

LEGAL AND ETHICAL PRINCIPLES

Please note that while the contents herein refer to NSERC, the concepts are applicable to both NSERC and the CIHR. For further information please refer to the "Framework for Tri-Council Review of Institutional Policies Dealing with Integrity in Research" located at http://www.nserc.gc.ca/sf_e.asp?nav=sfnav&lbi=p9 .

CANADIAN ENVIRONMENTAL ASSESSMENT ACT

NSERC has adopted an environmental assessment (EA) policy and review process to ensure that all NSERC-funded research adheres to both the letter and the spirit of the *Canadian Environmental Assessment Act* (CEAA). Potential environmental impacts of proposals are assessed by NSERC EA Officers in parallel with the peer review process.

Applicants must complete an environmental impact statement and an EA "pre-screening" (Appendices A and B of Form 101) if they propose work that: (a) is conducted outside an office or laboratory; or (b) involves the construction, operation, modification, decommissioning, abandonment, or other activity in relation to a built structure that has a fixed location and is not intended to be moved frequently. The information in the Appendices A and B allows NSERC EA Officers to determine whether or not the proposal is subject to an Environmental Assessment Screening under the CEAA.

It is possible that applicants will submit proposals that might have a negative impact on the environment, but are not subject to the CEAA. In such instances, applicants will be required to complete an Environmental Assessment Screening under NSERC's Policy and Environmental Assessment.

In some instances, the NSERC EA Officers may contact experts in various relevant fields to comment on the appropriateness of proposed methodologies, mitigation measures, etc.

CONFIDENTIALITY OF APPLICATION MATERIAL

When you were appointed to the committee or panel, you were asked to read and sign the *Conflict of Interest, Confidentiality and Non-Disclosure Declaration for Members of NSERC Selection Committees or Panels* (Form 251) describing NSERC's expectations and requirements.

All application material (exhibit books, printouts, notes, financial summaries, referee reports) is provided to committee members in strict confidence and must be used for review purposes only. Such material should be kept in a secure place that is not accessible to colleagues or students.

You should leave your competition material (except your personal notes) at the competition centre for disposal by NSERC. If NSERC requires your assistance to clarify details for particular cases after the competition (e.g., for an appeal case), you will be provided with new copies of relevant material. The material that you still possess after the end of your term on a committee or panel (e.g., your personal notes on applications you reviewed) must be destroyed by a secure process (e.g., by deleting electronic data files, or by shredding or burning paper, or arranging for their return to NSERC.)

COMMUNICATION WITH APPLICANTS

You must **NOT** enter into direct communication with applicants to obtain additional information on their proposals. If you require further information, contact the Program Officer. Refer all enquiries from applicants to NSERC; staff will act as liaison between the selection committee or panel and the

applicants.

CODE OF ETHICS AND BUSINESS CONDUCT

Council has adopted a *Code of Ethics and Business Conduct for members of NSERC Standing and Advisory Committees* and a *Statement on Ethics for NSERC Selection Committees and Panels*. These documents were designed to enhance public confidence in the integrity, objectivity, and impartiality of its committee members. They require individuals on Council's standing and selection committees and panels to practise ethical behaviour and to disclose real, potential or apparent conflicts of interest, and to abide by any compliance measures that the President or his delegate determines as required. The *Code of Ethics and Business Conduct for members of NSERC Standing and Advisory Committees* is located at: www.nserc.ca/commit/code_e.htm and the *Statement on Ethics for NSERC Selection Committees and Panels* is reproduced at the end of this chapter.

Council By-Law II states that when a committee or panel of the Council assesses a specific application for an award, members who are directly or indirectly associated with the application must disclose their interest and follow guidelines adopted by the Council regarding conflicts of interest. Members of any committee or panel of the Council who stand to gain or lose financially either in their personal capacity or by virtue of being an officer of any legal entity affected by a policy or financial decision of Council must disclose their interest.

GUIDELINES ON CONFLICT OF INTEREST

The following compliance measures have been in use by NSERC committees and panels for several years. These measures do not necessarily respond to all possible situations, and Council relies on the judgement of the committee members in developing measures that resolve real, potential, or apparent conflicts of interest in the public interest.

I. Standing Committees of Council

These are basically policy-making committees. Should a conflict of interest arise, the member concerned must declare such conflict and the committee will decide on whether or not that member may participate in the discussion and voting.

However, when a standing committee acts as a selection committee, any member in a conflict of interest must disclose the conflict in advance. The committee should then follow appropriate compliance measures (see below for examples of current practices). If a member who has to withdraw from discussion is the only member of the committee with expertise in the area under review, the committee may consult other experts.

II. Selection Committees and Panels (Grants and Senior Fellowships)

<u>Collaborative Health Research Projects Program</u>

- When a member is the applicant, co-applicant, collaborator or co-signer, or is from the same University faculty, hospital, company or department; or belongs to the same research unit as the applicant; or
- When there is an administrative or family link between the member and the applicant (e.g., head of the department, dean of the faculty, etc.); or
- When an industrial or government representative is directly involved in collaborative activities with the applicant; or

- When the member is uncomfortable with reviewing the applicant's proposal due to previous conflicts or any other reason; or
- When NSERC staff have reason to believe that a specific member should not be involved in the review:
  - the member must not be assigned the application for review;
  - the member must leave the room before discussion of the application without commenting.

B. Large Group or Large Equipment Grants

For large group proposals or large equipment requests involving several departments in several universities, a member from the same institution as one or several of the co-applicants may be allowed to participate in the discussion and vote, even if one or several co-applicants are from the member's university. The process to be used in such cases is the following:

Well before the meeting, NSERC staff will attempt to identify potential conflicts of interest to avoid placing members in an uncomfortable position; at the beginning of a session, the Chair will read the list of identified conflicts and also will ask each member in turn to declare any other relationship to a proposal (positive or negative). If the Chair believes that a member should not participate in the review, that member should withdraw from discussion and voting.

When the committee or panel (or the Chair) has difficulty dealing with a particular situation, it should be brought to the attention of NSERC staff who are responsible for making the final decision on compliance measures.

III. Scholarships and Fellowships Selection Committees (Graduate and Postdoctoral Level)

If a student applying for an award is under the direct supervision of a committee member, the member should leave the room and abstain from discussion and voting; if the student is from the member's department, the member may remain in the room but should not participate in the discussion and voting.

When the guidelines do not clearly describe a situation, or when the committee (or the Chair) has difficulty dealing with a particular situation, it should be brought to the attention of NSERC staff who are responsible for make the final decision on compliance measures.

IV. Investors in Participating Companies

When a committee member is an investor in a company that is a partner in or contributor to a project or program being considered for an NSERC grant, the member should disclose this information to NSERC staff and not participate in the review of the application.

PRIVACY ACT

Based on the *Privacy Act*, personal information provided to NSERC by applicants must be used only for the purpose of assessing NSERC applications and making funding decisions. Please remember that the use or disclosure of this information for any other purpose is illegal.

NSERC must collect personal information directly from the individual to whom it relates. We may collect it from other sources, such as external reviewers, only as part of the formal peer review process. For this reason, GSCs must not use or consider information about an applicant that has been

obtained in any other way, for example, by a GSC member by virtue of his/her involvement in non-NSERC activities.

Applicants have a right to access information about themselves in NSERC files, including, for example, the full texts of referee or site visit reports. The Act allows NSERC to edit a reviewer's name from a review before disclosing it to the applicant; however, lists of committee members are published regularly by the Council, and the identities of site visit members are known to applicants.

It is important for committee members to adhere strictly to the guidelines set out in the *Conflict of Interest, Confidentiality and Non-Disclosure Declaration* (reproduced at the end of this chapter).

HUMAN RIGHTS ACT

The activities of NSERC are subject to the *Human Rights Act*. The purpose of the Act is to give effect to the principle that every individual should have equal opportunity with other individuals to make for himself or herself the life that he or she is able and wishes to have, consistent with his or her duties and obligations as a member of society, without being hindered or prevented from doing so by discriminatory practices.

For all purposes of the Act, race, national or ethnic origin, colour, religion, age, sex, marital status, family status, disability and conviction for an offence for which a pardon has been granted are prohibited grounds of discrimination. Where the ground of discrimination is pregnancy or childbirth, the discrimination is deemed to be on the ground of sex.

It is a discriminatory practice to deny a service to an individual or to differentiate adversely in relation to any individual in the provision of that service.

OFFICIAL LANGUAGES

NSERC, like all other federal institutions, has a key role to play in the implementation of the *Official Languages Act*. NSERC has an obligation to ensure that:

- The public can communicate with and receive services from the agency in either official language; and
- The work environment can accommodate and is conducive to the effective use of both official languages by its employees and Council members.

Council ensures that its committees or panels and staff are fully aware of their obligations and rights regarding official languages by providing documentation on Official Languages to employees and Council members and by including relevant guidelines in the instructions to selection committees and panels.

In accordance with its active offer of bilingual service to the public, NSERC will try to appoint more experts with the appropriate language capabilities to serve on committees or panels. Selection committees or panels visiting francophone researchers must ensure that meetings can be conducted in French. If required, an NSERC staff member will accompany those visiting teams which foresee difficulties in this regard.

Selection committees and panels must ensure that all applications receive a full and detailed evaluation regardless of the official language of presentation. On occasion this may entail consultation with NSERC staff to identify committee members or external referees with adequate linguistic capability.

In accordance with its active offer of bilingual service to the public, upon request, NSERC will provide the service of simultaneous translation for the selection committees or panels during competition meetings. Committee members who wish to make use of this service should advise NSERC well in advance of the meeting to allow for the preparations.

ETHICAL AND OTHER CONSIDERATIONS

NSERC requires that researchers adhere to a number of policies and regulations governing research in particular areas:

- Research requiring the use of animals;
- Research involving human subjects
- Human pluripotent stem cells;
- Research involving biohazards;
- Research involving radioactive materials;
- Research that potentially has an effect on the environment

These regulations are described in the section "Requirements for Certain Types of Research" in the NSERC *Program Guide for Professors* and are available on the NSERC Web site at: www.nserc.ca/guide/p7_e.htm.

It is the responsibility of NSERC staff with the support of administrators from research institutions to ensure that the researchers adhere to these guidelines. However, selection committees or panels must alert NSERC to any potential ethical concerns or problems that are observed in site visits or during the evaluation process. Here are some examples:

- Inadequate sensitivity to the potential concerns of human subjects, and/or inadequate provisions for the participation of human subjects in experiments, as required by the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans*;
- Use of animals in experiments where the significance of the proposed research does not appear to justify either the use of animal subjects or the proposed experimental protocol;
- Inadequate training of graduate students in the handling of hazardous chemicals or biological substances;
- Potentially harmful effects on the environment or an inaccurate or incomplete assessment of these effects (whether or not they have been described in Appendix A, Form 101).

If a committee or panel raises serious ethical concerns, they should be discussed immediately with NSERC staff to determine if there is a means of resolving any apparent problems quickly or if the release of any grant funds should be delayed pending resolution of the problem.

POLICY ON INTEGRITY

The three federal granting agencies have defined their policies with respect to scientific integrity in the *Tri-Council Policy Statement: Integrity in Research and Scholarship* located on the NSERC Web site at: www.nserc.ca/guide/p9_e.htm. A researcher's signature on an application to NSERC commits the applicant to a number of principles including compliance with the integrity policy.

NSERC expects the highest standards of integrity in the research and scholarship that it funds. Should committee members identify what appears to be a lack of scientific integrity during the evaluation process, they should discuss any such concerns with the Program Officer or senior NSERC staff at the

earliest opportunity. Examples of problems include:

- Any indication of falsification or fabrication of data, or of plagiarism;
- Inaccurate or missing information on the application form (e.g., inaccurate status of publications listed in personal data forms);
- Lack of appropriate control/monitoring within the university itself;
- Undue restriction on the dissemination of research supported by federal funds, especially if it appears to be influencing in a negative fashion the career opportunities of the graduate students.

NSERC will refer any allegations to the appropriate university for investigation. Such allegations should **not** be a consideration during the peer review process, nor should they be part of the committee or panel's evaluation discussions.

NSERC will decide on an appropriate course of action once it has received a report from the university. Cases may be referred to Council's Committee on Professional and Scientific Integrity for advice.

The policy on integrity also covers integrity in the peer review process. Members of selection committees or panels should abide by the principle of not using information, concepts or data obtained through access to confidential applications for funds for research without prior permission of the author. Any breach of confidentiality of this nature will be investigated and may result in the imposition of sanctions.

PROCEDURES FOR COMMITTEE MEMBERS UNDER INVESTIGATION

Members of an NSERC committee or panel who find themselves in the position of having to respond to formal allegations of financial or professional impropriety will not participate in the work of the committee or panel while an investigation is under way.

STATEMENT ON ETHICS FOR
NSERC SELECTION COMMITTEES AND PANELS

NSERC must meet the highest ethical standards in all that it does in order to continue to merit the trust and confidence of the research community, the government, and the public at large. The members of NSERC selection committees and panels must meet very high standards of ethical behaviour in their task, and must be seen to do so in order to honour and enhance public confidence in the Council's ability to act in the public interest and for the long-term public good. Where a conflict arises between private and public interests, members will be expected to take whatever measures are necessary to ensure that public interests are protected.

The members of NSERC selection committees and panels are appointed as individuals; they are not the advocates or representatives of their disciplines nor are they the delegates of any organisation. Their duty is to make the best possible objective decisions on the investment of a fixed sum of scarce public funds in basic research, based on the merits of the cases made to them.

Conflict of Interest

Because of the technical content of the issues they must address, the selection committees and panels must have members who have current knowledge of the issues in research. However, the activities which maintain that current knowledge could put individual members in situations of real, potential, or apparent conflict between their private interests and their public duties as committee or panel members. If that should happen, there shall be full and open disclosure and the committee or panel as a whole shall take whatever measures are required to ensure ethical behaviour and to preserve the appearance of ethical behaviour.

NSERC recognizes that the potential for conflict of interest will always exist when expertise and current knowledge are required to judge among competing proposals in research. To attempt to devise rules which would eliminate all potential for conflict of interest would be to risk reducing vision and expert judgement to a bureaucratic exercise. The challenge is to recognize that conflict is always possible, and to be ready to manage it so that the ultimate outcome is in the public interest.

Disclosure and Compliance Measures

NSERC recognizes that the first guardian of ethical behaviour in the event of a conflict of interest is the individual committee member involved. The second guardian is the committee as a whole. Rules of disclosure and procedure can assist members to meet their obligations, but only if they choose to invoke them and to follow them both to the letter and in the spirit in which they were formulated. Members must openly disclose any real, potential, or apparent conflict of interest. The committee will then discuss with the Chair what measures, if any, are required to ensure that the public interest is protected. The Chair may seek guidance from NSERC staff before coming to a conclusion.

Disclosures and compliance measures will be documented and retained for the record. However, given their particularly sensitive mission, the selection committees and panels might consider these rules as only minimally adequate for their purposes, and may choose to add to them.

Confidentiality and Non-Disclosure

Documentation provided by NSERC to members of selection committees or panels may contain personal information and confidential technical information. It is subject therefore to the *Access to Information Act*, the *Privacy Act*, the *Tri-Council Policy Statement: Integrity in Research and Scholarship*, and other

federal information policies and regulations. (Information on these policies and regulations is available upon request.) Documentation must be treated as strictly confidential. Committee and panel deliberations are confidential. Peer review documentation provided to committee members must be used by the appointed committee members only for the purpose for which it was originally collected. It must not be used for any other purpose or discussed with or disclosed to non-committee members.

NSERC recognizes, of course, that the ultimate guarantee of the integrity of the peer review process is the integrity of the individuals appointed as members of the selection committees and panels.

Upon appointment, all members are required to indicate in writing that they understand and accept NSERC's requirements concerning conflicts of interest, confidentiality and non-disclosure (Form 251).

CONFLICT OF INTEREST, CONFIDENTIALITY AND NON-DISCLOSURE DECLARATION FOR MEMBERS OF NSERC SELECTION COMMITTEES OR PANELS

Conflict of Interest

Upon appointment to the Committee or panel, I have read and understood the *Statement on Ethics* and the relevant section(s) of the *Peer Review Manual* on the conflicts of interest. I agree to abide by their provisions, including the requirement for disclosure of any conflict of interest and the observance of compliance measures. I understand that refusal to abide by these provisions may result in appropriate sanctions being taken by NSERC.

Confidentiality and Non-Disclosure

Documentation provided by NSERC to members of selection committees and panels may contain personal information and confidential technical information. It is subject therefore to the *Access to Information Act* and the *Privacy Act*, www.nserc.ca/guide/p1_e.htm , the *Tri-Council Policy Statement: Integrity in Research and Scholarship*, www.nserc.ca/guide/p9_e.htm, and the *Government Security Policy*, www.tbs-sct.gc.ca/pubs_pol/gospubs/TBM_12a/gsp-psg_e.html. Documentation must be treated as strictly confidential. To assist NSERC in meeting its obligations, you are asked to read the following instructions and to sign below to attest that you are aware of the importance of confidentiality and that you agree to comply. **It is mandatory that you return this form at your earliest convenience to:** Cecilia Davis, Secretariat Officer, NSERC, 350 ALBERT ST, OTTAWA, ON K1A 1H5.

1) Peer review documentation provided to committee members must be used by the appointed committee members only for the purpose for which it was originally collected, i.e., assessing NSERC applications and making funding decisions. It must not be used for any other purpose or discussed with or disclosed to non-committee members.

2) Committee members must ensure that NSERC documents in their possession are stored in a secure manner to prevent unauthorized access. They must be transmitted using secure techniques and when they are no longer required, they must be destroyed in a secure manner, e.g., by deleting electronic data files, or by shredding or burning paper, or arranging for their return to NSERC.

3) Peer review deliberations are confidential. Comments made by individual committee members during the meetings and during the ranking of applications must never be discussed or disclosed. In programs where consensus committee or panel comments on specific applications are recorded, NSERC staff will provide such comments to the applicant(s). Until competition results are announced officially, they must remain confidential. The President must approve the recommendations of selection committees or panels before the names of successful applicants and details of awards are released to the public. The names of applicants whose applications were not recommended for support or who were declared ineligible are never made public by NSERC and must not be divulged by committee members.

4) Enquiries received by committee members from applicants about the review of their applications must be referred to NSERC staff. There must be no direct communication between applicants and committee members on matters arising out of peer review.

I have read the above instructions on the need for confidentiality with respect to NSERC information and committee or panel deliberations and the requirement for secure management of all information entrusted to me by NSERC. I understand that breaches of confidentiality are subject to investigation, to the imposition of sanctions by NSERC, and that the person about whom the information relates may seek civil remedy against me for breach of confidentiality. I agree to take personal responsibility for complying with these requirements.

Name (please print)	Signature
Program	Committee or Panel Name
	Date

Form 251 (March 2003)

APPENDIX C

POLICY AND GUIDELINES ON THE ASSESSMENT OF CONTRIBUTIONS TO RESEARCH AND TRAINING

DISSEMINATION OF RESULTS

Research is not complete until its results are validated and openly transmitted to an appropriate target audience. Reviewers should consider each contribution on its own merit - i.e. its quality and potential significance - and the extent to which the selected journal, or other vehicle of publication or dissemination, was appropriate.

In Collaborative Health Research Projects, importance is placed the translation of research results to the user sector. As such, the most effective means for the dissemination of research results may vary and will include journal publications, patents, conference and workshop participation/presentations, communications, reports, training of research personnel, etc. Panel members should look at the whole picture in assessing research contributions and should not limit their review to a study of the applicant's journal publication history.

For many disciplines, the most common and effective means of dissemination of results is through the publication of articles in high-quality refereed journals. The dissemination of results must, however, be assessed with discretion and good judgement as there are valid reasons for exceptions. The onus is on the researcher to select the most appropriate vehicle to ensure the maximum impact on the field. The notes in this chapter clarify the Councils position on some of the more important issues pertaining to the publication of research results.

ASSESSMENT OF QUALITY

The ultimate test of quality of any publication or research contribution is in its significance and use by others in the research and research-user communities, i.e. the extent to which it influences the direction of thought and further activity in the target community. Evaluation of this is subjective, but is **the** central element of peer review. Applicants are asked to indicate their most important recent publications on the personal data form and often provide copies of pre-prints with the application itself. Effective evaluation requires that the major reviewers read a representative selection of the research papers.

Strategic selection panels must **not** rely on numbers of publications in their assessment of productivity and must not create or use lists of premier or prestigious journals (or otherwise) in assessment of quality. The stringency of refereeing procedures of a journal is an appropriate consideration, but **care must be taken to ensure that knowledge of a journal's refereeing standards is up-to-date**. The quality of the publication's content is the determining factor. The Councils encourage publication of full papers reporting major components of a research program and is concerned about the increasing tendency to publish multiple short communications of partial research results.

CANADIAN JOURNALS

The selection of appropriate vehicles for the dissemination of research results is left to the discretion of the grantee. **For many disciplines, Canadian journals offer appropriate vehicles for the publication of research results, and it is for this reason that the Councils encourage their use**. At the same time, by publishing their results in a diversity of journals, researchers demonstrate acceptance of their work by more than a single editorial board.

Many journals published in Canada are read widely and are recognized for their critical reviewing standards. They are appraised and ranked annually by the Institute for Scientific Information, in Philadelphia, according to citation and impact factors, and they are under the continuous scrutiny of the new National Advisory Board on Scientific Publications, which reports to both the National Research Council and NSERC.

OTHER FORMS OF PUBLICATION

There are many kinds of valid publications (see NSERC Personal Data Form 100, and the "Guidelines for the Review of Applications in Engineering and the Applied Sciences," Appendix 6, *Researcher's Guide*). Kinds and patterns of publication vary both between and within disciplines and areas of research.

Panels are advised to evaluate the quality and impact of such contributions and not to regard them as "second class" or "grey literature." Consideration should be given to the following:

- **Monographs** (specialized scientific books) constitute an acceptable form of publication. Monographs may be individual works or components of irregular serial publications; they are commonly rigorously refereed and edited, and internationally recognized.

- In some disciplines, such as the more descriptive natural sciences, grantees commonly produce fewer, larger publications, many of which exceed the limits for journal articles. These may appear in **memoirs or special papers**, many of which again are subject to peer review and editing of a standard comparable to that of the best journals. Like many monographs, these special publications commonly form elements of a society's irregular publication series and are widely (internationally) distributed and consulted.

- Timely **review articles** play an important role in disseminating scientific knowledge. Some high-quality refereed journals are devoted to such articles. Review articles also may appear in peer-reviewed and well-edited special papers or conference proceedings. The place and value of such articles should be fairly assessed and recognized when they represent truly critical reviews which are a valuable addition to the field of research rather than an assemblage of parts of previous publications.

- **Conference (symposium) proceedings and abstracts** vary in the degree of originality of the contributions and the quality of refereeing and editing. Some organizations quite deliberately do not seek to publish their conference proceedings. In terms of published volumes of proceedings, probably the most important conferences are those which are well structured and rely largely or wholly on invited papers dealing with pre-assigned topics. Contributors are informed well in advance of the conference of plans to publish the proceedings and are given specific instructions for preparation of their manuscripts. Such conferences commonly result in well-reviewed, well-edited compendia of the modern state of knowledge on subjects of wide interest. The contributions may be highly original and the resulting volume of lasting value.

- **Government publications**, similarly, require particularly careful evaluation because they are highly variable in originality, in the rigour of reviewing and editing, and in the extent of their distribution. Some government organizations are sufficiently large and publish enough to (a) have an adequate professional staff to ensure high-quality refereeing; (b) employ external reviewers when necessary; (c) have a skilled editorial staff; and (d) have a level of international distribution of their publications comparable to that of some first-rate refereed journals.

- **Documented industrial contributions and contributions to engineering practice** are important indicators of research quality and its impact on the target community in engineering and the applied sciences. Their assessment is difficult, requiring disclosure to the review panel of the nature of the contribution, and a defence by the applicant of its novelty and innovation (not the simple provision of a service). Significant contributions to innovative engineering design and technology must be recognized by the peer system for their research content. (See the Guidelines for the Review of Applications in Engineering and the Applied Sciences, Appendix 6, *Researcher's Guide*, for further details.)

PRINCIPLES FOR ELECTRONIC SCHOLARLY PUBLISHING PROJECTS (Proposed)

Electronic scholarly publishing programs should ensure:

A. ARCHIVAL

That plans are in place to ensure that the published information is archived in perpetuity, in one or more standard formats, in such a way as to ensure the long-term availability and integrity of its contents.

B. BIBLIOGRAPHIC

1. The case of electronic journals:

a) the journal has an ISSN or other internationally recognized standard identifier;
b) the journal is included in major lists of scholarly electronic publications;
c) the journal is indexed by recognized directories of scholarly literature.

2. In the case of monographs:

a) That the published information has an ISBN or other internationally recognized standard identifier.

3. In the case of both electronic journals and electronic monographs:

a) That a searchable index of all contents be provided at all sites the information is available.
b) That the published information observes the legal deposit requirements of the National Library of Canada.

C. ECONOMIC

1. That the published information is made available either at no cost, or on a non-profit basis;

2. That abstracts and contents lists may be browsed at no cost.

D. LEGAL

1. The authors retain the right to republish their works in whole or in part, provided:

a) formal acknowledgement by the publisher has been obtained;
b) an appropriate copyright notice is included; and
c) reference to the official archived source(s) is provided.

2. That any licensing arrangements include reasonable provisions for the exchange of the published information between non-profit libraries and similar information services.

E. QUALITY

That publications should indicate whether or not they have been peer-reviewed, and if so, in what manner.

F. TECHNICAL

1. That contents are searchable electronically;

2. That regardless of the formats in which the published information is made available, at least one of these formats should be at a level accessible to users of low-end technology;

3. That appropriate security controls are in place to prevent destruction or tampering with the published information in its original form.

SPECIAL CIRCUMSTANCES FOR RAPID DISSEMINATION OF RESEARCH RESULTS

In some fast moving areas of research (e.g. some areas of computing science, genetics, microelectronics), special means of rapid dissemination of research results are used to reach the target audience with minimal delay. Communications, quick-print reports, letters and even broad dissemination of pre-prints are important vehicles for disseminating research results. Specialist knowledge on the panel should be employed to evaluate the relative merit and significance of such publications.

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 have important results of their research published prior to re-applying to NSERC for financial support. For example, the time necessary to complete a monograph may exceed the time available between consecutive applications, or publication may be delayed to allow technology transfer or the protection of a patent. Grantees are subject to the administrative policies of their universities in the area of Maternity, Paternity, and Care and Nurturing Leave. Other types of situations such as child bearing or early child care, administrative leave or disability may also result in publication delays.

Applicants are expected to describe such circumstances clearly and fully in their application. Grant selection panels must be sensitive to the impact of the circumstances on the level of productivity while ensuring that the quality of the research remains competitive. Each case is reviewed on its own merits.

USE OF CITATION DATA

Citation data can be informative and useful in assessing the impact of a researcher's activities and in evaluating the stature of the journals in which researchers publish their results. However, NSERC is of the opinion that these data may be exceedingly damaging and misleading if not employed knowledgeably and with caution. Therefore, panels should consider the following points when using citation indices:

- Journals should be compared by impact factor only if they have similar purposes. It can be highly misleading, for example, to compare "general" and "specialized" journals, "national" and "international" journals, "review" and "topical" journals.

- It is difficult and dangerous to compare citations of papers published in English and French, whether or not the journal is a bi- or multilingual one. Direct comparisons generally are invalid.

- Citation data for research that is peculiarly, or even uniquely, Canadian are not necessarily representative of the quality or intrinsic merit of the research. For example, some studies of the Canadian Shield or of permafrost engineering may have relatively specialized, targeted readerships.

- A much longer lead time is necessary to assess the impact of research in some disciplines or sub-disciplines than in others. Direct comparisons of citation data can be highly misleading.

- As more research comes to be conducted by teams rather than by individuals or **ad hoc** short-term associations of individuals, citation data may unfairly reflect the contributions of individual members of the team (particularly in disciplines where authors' names are traditionally displayed in alphabetical order).

Excessive and unwarranted self-citation or negative citation can result in a misleading measure of the value of an individual's research results.