

REQUEST FOR APPLICATIONS

THE TERRY FOX NEW FRONTIERS PROGRAM PROJECT GRANT (PPG) (2017)

Description

This opportunity targets the aggregation of independently fundable research projects around a common theme and the inclusion of core technologies that are used by each of the projects into a Program Project. The funding program provides support to a group of researchers conducting independent high quality investigations in a complex area of cancer research. The purpose of the program is to stimulate group interaction based on the premise that high impact work in complex areas of cancer research requires collaboration. The Terry Fox New Frontiers Program Project Grant (PPG) is designed for researchers with complementary skills, who investigate different aspects of a given cancer relevant topic, the results of which will be realized more rapidly and efficiently than if the individual projects were to be funded as a series of independent operating grants. This long-standing funding opportunity has supported many of the best cancer research groups in Canada.

Purpose

The purpose is to explore new frontiers in cure-oriented cancer research.

Scope

To support multidisciplinary program projects of excellence that contribute to well-defined research topics of relevance to cancer. The goal of each innovative and independently fundable research project and technology that comprise a Terry Fox New Frontiers PPG is to provide new knowledge with the potential to transform cancer diagnosis, treatment and/or understanding of cancer biology. Applications that address cancer-relevant issues, including (i) hard-to-treat cancers, (ii) metastatic disease, (iii) mechanisms of disease progression and/or resistance, or (iv) cancer stem cells are welcomed.

Secondary program project goals include support for:

1. High-quality research that addresses an important cancer topic that is best approached through collaborative teams
2. Innovative and high-risk projects of large impact, for which the group research environment will maximize the chance of success
3. Leveraging of cutting-edge technologies that builds synergistic collaborations, and
4. An innovative and supportive training environment for the next generation of cancer researchers.

Support offered

This Request for Applications (RFA) supports¹ program projects comprised of a minimum of three independent researchers and their individual research projects that may also include one or more technology (or 'core') platforms that will be used by the projects in pursuit of a well-defined cancer research topic.

This RFA will support New and Renewing PPG Applications.

New Applications are defined as coming from a group of investigators proposing a new thematic area of cancer research. New Applications can apply for up to \$750,000 per annum for a maximum of up to three years commencing July 1, 2017.

Renewing Applications are defined as coming from (1) a minimum of three continuing investigators whose PPG term is coming to an end, and (2) continuing development of the same thematic area of cancer research as the previous PPG. Renewing Applications can apply for up to \$1,500,000 per annum for a maximum of up to five years commencing July 1, 2017. A proposal that was unsuccessful in a previous PPG competition as a renewal application can only apply as a new application. Should investigators renewing an application decide to split into two groups, the resulting proposals will be considered as new applications.

Funding Envelope

The Terry Fox Foundation's contribution to the amount available for this RFA is subject to availability of funds raised by the Foundation, and may include (but does not require) co-investments made by other interested organizations. The Terry Fox Research Institute (TFRI) reserves the right to reduce, defer or suspend financial contributions to grants received as a result of this funding opportunity.

This opportunity will target funding of a minimum of three PPG grants in this competition cycle.

Eligibility

This competition is open to faculty-level scientific and clinical research groups at eligible sponsoring Canadian institutions².

Eligible Applications

The minimum requirements for an eligible Application include:

1. One of the Principal Investigators is designated as Project Leader. The Project Leader must be a Principal Investigator in the group applying for support, be able to assume scientific leadership of

¹ A list of eligible expense categories is provided below at Eligible Costs (page 3).

² An eligible sponsoring Canadian institution is a research-capable university, hospital or institute which has completed a Memorandum of Understanding for research grant funding with the Terry Fox Research Institute.

the group and have experience in leading and administering research. It is possible to propose another Principal Investigator as a Co-Project Leader.

2. The Application must comprise no fewer than three innovative, independently fundable research projects, each led by separate Principal Investigators who contribute significantly to a well-defined research theme or topic. The PPG research must be distinct in its objectives from those for which members of the group currently receive research funding. Please note that during the review process, one or more components (individual projects or cores) may not be considered as appropriate for funding within the Terry Fox Program with the result that only a subset of components is recommended for funding. Regardless, the final recommended program must be comprised of, but not limited to, at least three individual projects from three different Principal Investigators in order to receive funding. The core must also be fundable if it is viewed as necessary for the success of the program. Historically, funded PPGs have been comprised of four to seven components.
3. The Application may include one or more cutting-edge core technology platforms, the use of which is essential to the performance of two or more of the fundable individual research projects. A core technology platform must be led by a Principal Investigator, who may also be a Principal Investigator of one of the individual research projects.
4. The Applicants are encouraged to profile collaborations with investigators in other countries in their proposals. However, TFRI will not fund research to be conducted outside of Canada and the Application cannot include such requests.
5. When applicable, the Applicants are encouraged to include as Principal Investigator(s) TFRI New Investigator(s) mentored by one or more of the senior Principal Investigators of the Application.

Eligible Costs

The following expenditures will be considered eligible for funding through this funding opportunity:

1. Research operating costs that do not overlap with those for which group members currently receive funding
2. Salaries of research assistants, technicians, program coordinators and other personnel who will enhance the collaborative research productivity of the application. Program Projects are encouraged to include a program coordinator / manager among the salaries requested, although these must be placed in the Program portion of the budget.
3. Support for research trainees at institution approved rates
4. Costs of data collection, database(s), maintenance of information holdings, and analyses directly related to the application
5. Travel, meetings and networking activities directly related to the Application, including costs of collaboration, planning and knowledge exchange activities, and costs to attend the TFRI Annual Scientific Meeting. Requests can be made up to a maximum of \$15,000 per annum for new

applications and \$25,000 per annum for renewal applications. These costs are to be included in the Program portion of the budget.

6. A portion of the cost of capital equipment up to \$100,000 to be spent in the first year of the award, and maintenance costs for common services and shared facilities essential for the Program Project. TFRI anticipates that the Applicants will seek other sources of funding to acquire the necessary capital equipment (see the Research Environment section below).

The following costs are not eligible:

7. Remuneration for Project Leader, Principal Investigators, Co-Investigators, Collaborators
8. Major equipment over \$10,000 not specified in the original, approved budget
9. Academic fees for students
10. Indirect costs such as overhead or infrastructure charges (e.g., institutional costs of research, building maintenance, rent, insurance, computer network charges, patenting costs)
11. Laboratory and office furniture
12. Entertainment or hospitality costs
13. Membership fees
14. Activities by researchers not specified in the Application.

The Research Environment

TFRI recognizes that Program Project teams work in research environments that are important for the successful completion of proposed experiments. These research environments exist in different spheres – locally at the institution, regionally, nationally and internationally. The Applicants should describe the general research environment in which the Program will be carried out and in particular any resources that will be necessary to undertake the proposed experiments. This may include shared resources such as access to clinical resources, genomics/proteomics facilities, cell analysis/sorting/imaging facilities, animal facilities, GMP laboratories, and computation centers. This may also include any additional resources available to members of the Program that will enhance its ability to accomplish the work outlined in the Application. Where a key resource is available, the Applicant should include a letter of commitment from that resource. When a key resource is not available, the Applicant should present a plan to obtain that resource.

Key Dates

1. A **Letter of Intent (LOI)** is required electronically by **Monday July 4th, 2016 (5:00 p.m. Pacific Daylight Time)**
2. **Invitation to Submit a Full Application** by **Wednesday September 14th, 2016**
3. A **Full Application** is required electronically by **Monday November 14th, 2016 (5:00 p.m. Pacific Standard Time)**
4. A Full Application will normally be assessed at a **Site Visit** to occur during **April 2017**
5. Anticipated **Notice of Decision / Award** by **Wednesday May 31st, 2017**
6. **Funding Start Date** is **Thursday July 1st, 2017.**

How to Apply³

1. The **LOI** must be submitted by **Monday July 4th, 2016 (5:00 p.m. Pacific Daylight Time)**. Complete the Microsoft Word LOI template available at <http://tfri.ca/en/research/program-project-grants/program-project-grants-2017.aspx> following the detailed guidance notes for preparation of the LOI. TFRI reserves the right to reject LOIs that are incomplete or do not observe the page limits specified below.

The **LOI** comprises:

- a. The cover pages giving (i) Program title, (ii) List of projects and core(s), and (iii) List of the Project Leader(s), Principal Investigator, and Co-Investigators – with their roles and signatures
- b. A scientific abstract of the Program (*max 1 page*) with headings for: (i) background, (ii) overall goal of the application, (iii) expected outcomes and impact of the research
- c. An overall description of the Program (*max 5 pages*) with headings for (i) background, (ii) objective(s), (iii) importance and novelty, (iv) collaboration and synergy within the Program, (v) training and mentoring, (vi) institutional commitment(s), (vii) role of partners, and (viii) specifics of the research environment and how the Program integrates with related research activities at the sponsoring Institution (provide a summary of the related institutional goals and key participants)
- d. A progress report (*max 3 pages*) must be provided for (i) a previous period of PPG funding from TFRI, or (ii) previous funding from other sources leading up to the proposed new Program
- e. A summary of Individual Projects (*max 2 pages each*) giving (i) project title, (ii) lead Principal Investigator and where applicable, co-Investigators and Collaborators, (iii) background, (iv) objective(s), (v) summary of research plan, (vi) what is innovative about the project, (vii) the anticipated results and outcomes of the project, (viii) collaboration with other projects and cores in the proposed Program, and (ix) how the project integrates and adds value to the Program
- f. Optionally, a summary of Individual Core(s) (*max 2 pages each*) giving (i) title of the core, (ii) lead Principal Investigator, (iii) background, (iv) objective(s), (v) development, operational and business plans for the core, (vi) current status of the core, (vii) what is innovative about the core, and (viii) how the core integrates and adds value to the Program
- g. A short list of key references, numbered as references appearing in sections b to f above.

³ TFRI does not maintain a web-based electronic grants management system. TFRI requires documents to be submitted electronically as Adobe Acrobat documents to ppg@tfri.ca. All communications will be acknowledged. For files larger than 25Mb, please submit as multiple emails clearly labeled in order in which they are to be read.

- h. A high-level budget with short justification (*max 1 page*)
- i. A list of suggested reviewers for the proposal, including institutional affiliations and areas of relevant expertise
- j. A list of reviewers to exclude – reviewers who the Investigators feel would not provide an objective review of the application with a brief rationale of exclusion for each
- k. Curriculum Vitae of all program applicants (Project Leader, Principal Investigator, Co-Investigator. Use the CV template provided on the <http://tfri.ca/en/research/program-project-grants/program-project-grants-2017.aspx> website.

2. The **Full Application** must be submitted by **Monday November 14th, 2016 (5:00 p.m. Pacific Standard Time)**.

Complete the Microsoft Word Full Application template provided to applicants invited to submit a Full Application in accordance with the 2017 PPG Full Application Guide. TFRI reserves the right to reject Full Applications that are incomplete or do not observe the page limits specified below.

The Full Application comprises an overview section and individual sections for each of the independent projects and core technology platforms.

The **Program Overview** comprises:

- a. The cover pages giving: (i) Program title, (ii) research institute(s) administering award, (iii) list of individual projects and core(s), (iv) list of the Investigators with their roles and signatures, and (v) a lay summary
- b. A scientific abstract of the Program (*max 1 page*) with headings for: (i) background, (ii) overall goal of the application, (iii) expected outcomes and impact of the research
- c. An overall description of the application (*max 10 pages*) with headings for (i) background, (ii) objective(s), (iii) importance and novelty, (iv) institutional commitment(s), and (v) role of partners.
- d. Specifics (*max 3 pages*) of how the proposal integrates with related research activities at the sponsoring Institution (provide a summary of related institutional goals and key participants).
- e. A progress report (*max 5 pages*) must be provided for (i) a previous period of PPG funding from TFRI, or (ii) previous funding from other sources leading up to the proposed new Program.
- f. The Team and Program Management Plan (*max 10 pages*). A description of how the projects will be led and managed, information will be shared, decisions made, and resources allocated. Provide evidence of how team members and trainees will be mentored, collaborations encouraged and synergies created. Describe processes to ensure that impacts will be created from outcomes.

- g. A complete list of references for the preceding sections (*no page limit*)
- h. Description of the research environment (*max 1 page*). The description must include details of resources and research infrastructure of which the Program will take advantage. If a piece of infrastructure is absent, the applicants must provide a plan of how that research infrastructure will be obtained.
- i. Individual project and core proposals (see below) are to be attached as appendices.
- j. Curriculum Vitae of all program applicants (Project Leader, Principal Investigators, Co-Investigators) with the exception of Collaborators.

The individual **Project applications** will comprise (a minimum of three required):

- a. The cover pages giving: (i) project title, (ii) list of Investigators included in the individual Project application, (iii) lay summary, and (iv) up to 10 keywords
- b. A scientific abstract (*max 1 page*) with headings for: (i) background, (ii) objectives, (iii) summary of research plan, and (iv) the anticipated results and outcomes
- c. The research proposal (*max 20 pages*) with headings for: (i) introduction, (ii) overall goals, (iii) background and preliminary data obtained by applicant(s), (iv) specific aims and hypothesis(es), (v) research plan (this section should include technologies and methodologies), (vi) project time lines.
- d. A description (*max 3 pages*) of specific synergies and integration with other components of the program.
- e. A complete list of references for the preceding sections (*no page limit*)
- f. Tables and figures (*max 10 pages*)
- g. Other application material must include: (i) letter(s) of collaboration, (ii) letter of commitment from the institution, (iii) up to five key peer-reviewed publications and/or submitted manuscripts directly related to the application, and (iv) equipment quote(s) if applicable.

The individual **Core technology platform application(s)**, if applicable, will comprise:

- a. The cover pages giving (i) name of Core, (ii) list of Investigators included in the individual Core application, (iii) lay summary, (iv) up to 10 keywords
- b. A scientific abstract (*max 1 page*) with headings for: (i) background, (ii) description of the technology platform offered, and (iii) summary of the work plan for projects
- c. The core proposal (*max 20 pages*) with headings for (i) background, (ii) objectives, (iii) specific goals for each of the projects that will use the Core, (iv) technologies and methodologies, (v) current status of the Core, (vi) research and development plan for the Core, (vii) management plan for the Core and, if applicable, how the Core fits within the larger institutional core technology platform, (viii) what is innovative about the Core, (ix) how the Core integrates and adds value to the Program, and (x) anticipated results and outcomes
- d. A complete list of references for the preceding sections (*no page limit*)

- e. Tables and figures (*max 10 pages*)
- f. Other application material must include: (i) letter(s) of collaboration, (ii) letter of commitment from the institution, (iii) up to 5 key peer-reviewed publications and/or submitted manuscripts directly related to the application, and (iv) equipment quote(s) if applicable.

The **Program Budget Proposal** will consist of two components:

1. A single **Excel Budget Workbook** into which all budget components (Program, Individual Projects and Core(s)) are entered. The Workbook is available as a three-year version for new applications and a five-year version for renewal applications. The budget must not overlap in any category with other projects for which applicants currently receive funding. The budget will include:
 - a. Project Information: title, institutions receiving funding, responsible PIs, and location.
 - b. Project budgets: research operating costs, salaries of staff, trainee support, costs of data collection, maintenance, and analysis, and capital equipment (to be spent in the first year of the award).
 - c. Core budgets: technology platform operating costs, salaries of technical staff, costs of data collection, maintenance, and analysis, and capital equipment (to be spent in the first year of the award).
 - d. Program Costs: expenses not covered in individual project and core sections. This may include salaries of Program Coordinator(s)/Manager(s), travel costs, and costs of planning and knowledge exchange, including attendance at TFRI annual scientific meetings. This portion of the budget will total \$15,000 or less per annum for new applications and \$25,000 or less per annum for renewals.
 - e. Overall Core Costs summary: an optional table to be completed when a PPG Core will form part of a larger institutional Core Platform Technology. This will itemize all sources of annual revenue for the institutional Core Technology Platform together with a summary of all direct expenses for its use by the Program and will specify how the PPG Core proposal fits into the larger institutional funding framework.
2. A **Budget Justification Document** that explains the budget plans for each component of the application and provides a narrative description (cross-referenced to budget line items) of the plan. This will include FTE breakdowns and a description of other funding sources for partial FTEs, consumables and purchased services along with timelines of expenditures, equipment costs, and other expenses. These are to be broken out as :
 - a. Program Costs for items not covered in the individual project and core technology platform sections (*e.g.*, Program Coordinators/Managers, travel costs, and collaboration, planning, and knowledge exchange).

- b. Project Costs as separate sections describing the budget components of each Individual Project.
- c. Core Costs as separate sections describing the budget components of each Core Technology Platform.
- d. Details on Overall Core Costs per the Overall Core Costs Summary tab in the Budget sheet (for further detail, please see the [Terry Fox 2017 Program Project Grant Full Application Guide](#)).
- e. Appendices for inclusion of items such as quotations, letters of commitment and Statements of Work as appropriate.

Please refer to the [Terry Fox 2017 Program Project Grant Full Application Guide](#) for more detailed guidelines on budget and justification contents and formatting.

3. Full Applications will normally be invited to host a **Site Visit** to be held during **April 2017**.

Evaluation

A general description of the multi-stage review process used by TFRI to assess Proposals is provided below. TFRI reserves the right to alter this process as appropriate:

1. At the **Letter of Intent** stage, the *PPG Steering Committee on Research Excellence (PPG SCORE)* will review and rank relevant LOIs for excellence using the review criteria below. PPG SCORE may make suggestions to applicants on how to strengthen subsequent proposals. Normally, renewing applications will be asked to submit a Full Application unless major concerns become obvious at the LOI stage. Among new applications, only the top ranked LOIs will be invited to submit Full Applications. TFRI will normally invite between two and three Full Applications for each final award to be made in a particular competition (as determined by the funds available). The review criteria used by PPG SCORE will include, but may not be limited, to:
 - a. The excellence, leadership and track record of the Applicants
 - b. The innovation of the Program
 - c. The relevance and likely impact of the Program
 - d. The evidence of, or the potential for, the group to work together as a team; and
 - e. The importance of collaboration to the goals of the Program.
2. At the **Full Application** stage, each Program will be evaluated as a single, integrated entity. Within a full application, each independent component will be evaluated separately for its own scientific merit. A Peer Review Panel will hold a Site Visit Planning teleconference at which a number of questions and issues may be identified. Although Full Applications are normally site visited, the Peer Review Panel can recommend that a Full Application not proceed to a site visit if sufficient problems are identified.

The Applicants of Programs proceeding to Site Visits will be provided with the Peer Review Panels' questions and issues and will have the opportunity to respond in writing to those questions and issues in advance of the Site Visit. In addition to the review criteria above, the Peer Review Panel will complete a structured review to assess:

- a. The scientific excellence, leadership and track-record of the Applicants and the evidence of the group working together as a team
 - b. The quality of the questions asked – their relevance and impact
 - c. The originality and innovative potential of individual Projects and Core(s) to achieve the overall research goals
 - d. The synergy within the Program – the importance to the research of each component, including how Core(s) integrate and add value to the Program, and
 - e. The research environment, including the training environment.
3. When a Full Application is invited for a **Site Visit**, TFRI will work closely with the Project Leader of the Application and the Chair of the Peer Review Panel to develop an agenda for the one-day visit. Applicants should expect the agenda to address all or some of the following: (i) innovation of the Application, (ii) progress and impact, (iii) the rationale for each project and core, (iv) any issues outstanding from the response to questions and issues, (v) the environment, (vi) synergy of the component projects in meeting the program goal(s) and (vii) a poster session and meeting with trainees.
4. After all Site Visits are completed, **PPG SCORE** will receive the report and recommendations of each Peer Review Panel. PPG SCORE will discuss reports and recommendations with each of the Chairs of the Peer Review Panels as it decides the **Final Ranking** of Applications. PPG SCORE will recommend funding to TFRI of the top-ranked Applications within the available funding envelope.

Conditions of Funding

Applicants and sponsoring Institutions are expected to observe TFRI's Research Administration Policy.

This includes:

a. Certificates

Before funding is made available, the Applicants must obtain from the sponsoring Institution all applicable certificates, including:

1. *Biohazards*. For projects involving use of biological material, a certificate guaranteeing that the project will be conducted under conditions which satisfy the Canadian Biosafety Standards (CBS) 2nd edition (2015) and associated handbook and guidelines (to be published) (<http://canadianbiosafetystandards.collaboration.gc.ca/>)
2. *Animal Care*. For projects involving use of experimental animals, a certificate guaranteeing that all animals will be cared for and studied under conditions meeting the standards set forth in the

Canadian Council on Animal Care's "Guide to the Care and Use of Experimental Animals" Vol 1 (1993). (www.ccac.ca)

3. *Human Studies*. For projects involving human subjects, a certificate stating that the protocols and methods have been reviewed by the Institutional Research Ethics Board and found to be acceptable in accordance with current edition of the Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, Social Sciences and Humanities Research Council of Canada: 'Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans' (2014) (www.pre.ethics.gc.ca). If studies use investigational compounds, regulatory approval from Canada's Health Protection Branch is also required.
4. *Use of Human and Biological Samples*. TFRI is committed to ensuring that high quality bio-specimens are used in research that it funds, as these yield high, reproducible quality data. For this reason, TFRI requires all applicants for funding to certify that (i) all prospective (new) bio-specimens included in the TFRI-funded research will be collected in accordance with the standards set by the Canadian Tissue Repository Network (<https://www.ctrnet.ca/resources/operating-procedures>) and/or the Clinical Laboratory Improvement Amendments Act (CLIA) of the United States (<https://www.cms.gov/Regulations-and-Guidance/Legislation/CLIA/index.html>), and/or (ii) all retrospective (old) bio-specimens used in the TFRI-funded research have come from a CTRNet or CLIA-certified bio-repository. Links to the CTRNet certification program and registered biobanks can be found at <http://www.biobanking.org/webs/certification>. Applicants are required to submit evidence of current certification and participation in external quality assurance programs with the Project R&D Plan.
5. *Human Pluripotent Stem Cell Research*. TFRI endorses the guidelines set forward by the Canadian Institutes of Health Research on 'Human Pluripotent Stem Cells' now integrated into the 'Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2), Chapter 12. Section F (2nd edition) (<http://www.pre.ethics.gc.ca/eng/policy-politique/initiatives/tcps2-eptc2/Default/>). Applicants are required to contact TFRI before submitting an application for support of cancer research requiring any use of human pluripotent stem cells.

b. Reporting

TFRI requires funded Project Leaders to submit Annual Research and Metrics Reports and Quarterly Financial Statements, and expects Investigators of funded PPGs to present at TFRI Annual Scientific Meetings during the term of the award.

c. Project Title & Use of TFRI logo

Funded Applications are to be called 'The Terry Fox New Frontiers Program Project Grant in [title of program]'. Investigators are expected to comply with TFRI's Visual Identity Guidelines to be found at www.tfri.ca.

For inquiries, please contact:

Russell Watkins

Senior Programs Manager

Terry Fox Research Institute | l'Institut de recherche Terry Fox

675 West 10th Avenue

Vancouver, BC V5Z 1L3 CANADA

☎ Telephone: 1-604-675-8000 ext.7624

✉ Email: rwatkins@tfri.ca

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