NSERC DISCOVERY GRANT INFORMATION SESSION

Support Programs to Advance Research Capacity (SPARC)

MARK PHILLIPO
RESEARCH DEVELOPMENT OFFICER, SPARC/VPRI

UBC Point Grey campus is situated on the traditional, ancestral and unceded territory of the xʷməθkʷəy̓əm (Musqueam).

The UBC Okanagan campus is situated on the territory of the Syilx Okanagan Nation.

TOPICS OF DISCUSSION

1. Competition Details
2. Full Application: Instructions
3. Evaluation of Discovery Grants
4. Panel Discussion

1. NSERC DISCOVERY GRANTS PROGRAM

NSERC DISCOVERY GRANTS PROGRAM

The Discovery Grants Program supports research _programs_ in the natural sciences and engineering (NSE) and interdisciplinary research that is predominantly in the NSE

Discovery Grants assist in:

- Promoting and maintaining a diversified base of high-quality research capabilities in NSE in Canadian universities;
- Fostering research excellence; and
- Providing a stimulating environment for research training

- 5-year individual-led grant; only one can be held at a time, but can be renewed.

- In 2022/23: ~$48K/year. National Success Rate: 58%. UBC Success Rate: 64%

NSERC DISCOVERY GRANT SUPPLEMENTS

Discovery Accelerator Supplement has been discontinued

Discovery Launch Supplement:
- One-time $12,500 awarded to all Early Career Researchers

DND/NSERC Discovery Grant Supplement:
- Up to $120,000 over three years
- Funds the development of non-weapon specific technologies with dual-use applications in defence and security target areas
- No separate application is required. Applicants must indicate their interest in being considered for a DND Supplement and provide written justification of how their proposed research falls within the DND target areas as part of the Discovery Grants application process.

Northern Research Supplement:
- Up to $25,000 per year, for up to five years
- Recognizes the added costs unique to conducting research in the Canadian North
- Requires an additional 4-page research proposal and 2-page budget justification.

2. FULL APPLICATION: INSTRUCTIONS

FULL APPLICATION: INSTRUCTIONS

Sections	Format and Limits	Complementary Information in NSERC CCV
Summary of Proposal	3000 characters (~1/2 page) entered in Research Portal	
Proposal	5 page PDF attachment	
HQP Training Plan	9000 characters (~1 1/2 page) entered in Research Portal	
Past Contributions to HQP	6000 characters (~1/2 page) entered in Research Portal	✓
Most Significant Contributions to Research	9000 characters (~ 1 1/2 page) entered in Research Portal	✓
Additional Information on Contributions	3000 characters (~1/2 page) entered in Research Portal	✓

Sections	Format and Limits	Complementary Information in NSERC CCV
Relationship to Other Research Support (explanation)	12,000 characters (~2 pages) entered in Research Portal	
Relationship to Other Research Support (supporting documents)	No page limit—one PDF of scanned pages from other applications and grants	✓
Budget Justification	2 pages PDF attachment	✓
Samples of Contributions	4 separate PDF attachments	
List of References	2 pages PDF attachment	
Leave of Absence	2 pages PDF attachment	✓
Attestation on Confidential Research Contributions (if applicable)	Attachment	

SUMMARY OF THE PROPOSAL

Provide a summary of your research proposal in lay language.

- Describe the nature of the research—goal and objectives

- Why is the research important?

- What are the anticipated outcomes?

- How will your program impact your research field and Canada?

RELATIONSHIP TO OTHER RESEARCH SUPPORT

Explain relationship and overlap (conceptual or budgetary) between this application and other funding sources you have requested or secured.

If you have requested/secured support from CIHR and/or SSHRC:
• Explain and clearly distinguish your ideas, objectives, outcomes and expenditures; there should be no conceptual overlap.
• If you hold or receive funds from a CIHR Foundation Grant, you must clearly explain why the Discovery Grant funds are essential to carry out the research proposed in the Discovery Grant application.

Reference material in your CCV

HIGHLY QUALIFIED PERSONNEL (HQP) TRAINING PLAN

The HQP Training plan is divided into two components:

1. Training Philosophy
- Describe your approach to training HQP.
- Describe your mentoring approach and style.
- Describe the type of research training and development opportunities available to your HQP.
- Describe qualitatively any challenges or barriers encountered in ensuring an inclusive research and training environment.
- Describe the planned approach to promoting the participation of a diverse group of HQP, taking into account equity and inclusion in recruitment practices, mentorship approaches, and initiatives aimed at ensuring an inclusive research and training environment and trainee growth.

HIGHLY QUALIFIED PERSONNEL (HQP) TRAINING PLAN

2. Research Training Plan

- Outline how the research program and its anticipated projects are appropriate for HQP training in natural sciences and engineering

- Describe the involvement of HQP in individual objectives.

    - e.g., in objective 1, PhD1 will do X in year 1-2

- How will co-supervised students be trained by a collaborator?

- What is the value of the training program to the student's degree and future career?

- Can HQP be included in meetings, presentations at conferences, and publications?

PAST CONTRIBUTIONS TO HQP TRAINING

Describe your contributions to training of HQP **over the last six years** (2017-2023). Training supported by NSERC ranges from undergraduate theses and summer projects to postdoctoral levels, and includes technical and other research personnel. Describe your role in any co-supervised HQP.

There are three components to this section:

1. Training Environment:

- Describe your contributions to training and development of your past HQP (e.g., science outreach and engagement, interdisciplinary research, promoting EDI in the NSE, collaborations, interaction with the private and public sectors).
- Discuss the challenges/barriers encountered in ensuring an inclusive research and training environment.
- Describe specific, concrete actions implemented to support equity and inclusion in recruitment practices, mentorship approaches, and initiatives aimed at ensuring an inclusive research and training environment and trainee growth.
- Trainee demographic data **is not requested.**

PAST CONTRIBUTIONS TO HQP TRAINING

2. HQP Awards and Research Contributions:

- Describe your HQP's contributions (publications, patents, key presentations, commercialization, policies), and awards/scholarships and fellowships.

3. Outcomes and Skills Gained by HQP:

- Describe the outcomes of your HQP's research, as well as benefits to their careers (specific skills, jobs after graduation).
- Describe any delays HQP have had (leaves, delays related to COVID-19).

MOST SIGNIFICANT CONTRIBUTIONS TO RESEARCH

- List up to five of your most significant contributions to NSE research and/or practical applications over the last six years (2017-2023). Contributions made more than six years ago but for which the impact is being felt now (e.g., exploitation of patent, inclusion in code, etc.) may be included.
- For each contribution, describe its significance in terms of influence on the direction of thought and activity in the target community; and significance to, and use by, other researchers and end users. For collaborative contributions, describe your role.
- A contribution does not have to be a single publication or report. For example, a group of publications on a specific subject could be discussed as one contribution.
- Describe the significance – influence, target community.
- Create a story – e.g., creating a novel computing system resulted in three publications (1, 2, and 3) and a patent filing (A1…) that led to an exclusive licensing agreement with a Canadian company
- You may include the full reference to your contributions in this text box or provide the appropriate reference to your NSERC CCV.

ADDITIONAL INFORMATION ON CONTRIBUTIONS

Provide an explanation, as appropriate, concerning the contributions listed in your NSERC CCV. Such details may include:

- the nature of collaborations with other researchers;
- the rationale or practice used for:
  - the order of authors in the publications listed, and
  - the inclusion of students in the list of authors;
- your role in joint publications;
- the reason for selecting certain venues (journals, conferences) for publications and particular features of the venues (e.g., target audiences, review procedures);
- the impact or potential impact of patents and technology transfer;
- the nature of industrially relevant R&D activities;
- the significance of technical reports;
- original research reported in books or technical reports.
- you may include other activities or information to help committees to evaluate your contributions to and impact on science and engineering, including interdisciplinary research.
- reference material in your CCV

PROPOSAL

Limit of five pages in a free form document. Images and graphics can be included but count towards the page limit.

NSERC's [online attachment format](): Times New Roman, 12 pt; Single space; 1.87cm minimum margins (3/4'').

Suggested section headings:

- Recent Progress
- Objectives
- Literature Review
- Methodology
- Impact

PROPOSAL: RECENT PROGRESS

Describe your recent progress in research activities related to the proposal and, in the case of renewals, the progress attributable to your previous Discovery Grant.

PROPOSAL: OBJECTIVES

- Define the long-term and short-term objectives of your research program.
- A research program should have a long-term vision that expands beyond the five years of the Discovery Grant. A single, short-term project does not constitute a research program.

PROPOSAL: LITERATURE REVIEW

Discuss the literature pertinent to the proposal, placing the proposed research in the context of the state of the art.

- Why is the research required?
- Example – require an environmentally friendly method to clean up polluted rivers
- Currently – X number of rivers polluted in Canada; cost to productivity, economy, etc.
- SWOT analysis of who is doing what?

METHODOLOGY

- Describe the methods and proposed approach, providing sufficient detail to allow reviewers to assess the feasibility of the research activities. Describe involvement of students in methods.
- If applicable, describe how equity, diversity and inclusion will be addressed in the research design.
  - Make sure rationale and methodology for considering equity, diversity and inclusion in the research design are clearly described.

PROPOSAL: IMPACT

- Explain the anticipated significance of the work.
- Groundbreaking advances.
- Leading to a technology/policy that addresses socio-economic or environmental needs.
- Impacts:
  - Research Community
  - Local / National Community
  - Training the next generation of employees/leaders

BUDGET JUSTIFICATION

- Provide a detailed explanation and justification for each budget item identified in the Proposed Expenditures page.
- Provide sufficient information to allow reviewers to assess whether the funds requested are reasonable.

OTHER SUPPORTING SOURCES

- Attach a summary and budget page for any currently held or applied for CIHR & SSHRC grant.
- Do not include information for grants that will end before this DG starts.

SAMPLES OF RESEARCH CONTRIBUTIONS

- A maximum of four samples of research contributions from the last six years (2017-2023). These samples will be used by reviewers to assess the quality of your work.

- These documents should be chosen to represent your most significant and recent contributions, or those most relevant to the proposed work.

- Contributions may include :
    - Reprints
    - Preprints
    - Manuscripts
    - Theses
    - Technical reports

LIST OF REFERENCES

- Provide a list of references to literature in support of your proposal.
- Do not refer readers to web sites for additional information on your proposal.
- Do not introduce hyperlinks in your list of references.

ATTESTATION ON CONFIDENTIAL RESEARCH CONTRIBUTIONS

- Many contributions to industry or other end-users take the form of technical and internal reports, some of which may be confidential to protect proprietary information.
- If applicable, this attachment is meant for letters from industry or end-users attesting to the nature, importance, and significance of these confidential reports.

LEAVES OF ABSENCE

Applicants who have reported an eligible leave of absence in their CCV are entitled to an attachment used to list supplemental contributions to research (list of presentations, interviews and media relations, publications, intellectual property) and to training (list of supervisory activities) beyond the last six years, for a period equivalent to the duration of the leave.

Eligible leaves of absence include parental leave, medical leave, bereavement, extraordinary administrative duties.

Can also list supplemental contributions to research and to training for a period equivalent to the duration of delays related to COVID-19.

IMPACTS OF THE COVID-19 PANDEMIC ON RESEARCH

You are asked to briefly describe circumstances that have affected your research and training activities due to the COVID-19 pandemic dating back to March 1, 2020, and are asked to focus on describing the impact of these circumstances on your research and training activities.

- Information that must be included in any description is the duration of the circumstances affecting your research and/or training activities and, if applicable, a percentage of reduction in time devoted to regular research and training activities during the specified time period.
- Stating that you were unable to work or worked at a reduced capacity during a specified period of time for medical reasons **is sufficient**. It is equally important not to disclose personal circumstances affecting HQP.

WHERE DO YOU DESCRIBE THE IMPACTS OF THE COVID-19 PANDEMIC?

Contributions to Research and Training

- Impacts should be reported under the section Employment | Leaves of absence and impact on research in the CCV, even if they are not associated with a period of leave or reduction in time.

- Describe impact of delays in the Outcomes and Skills section of Past Contributions to HQP Training

Research and Training Plans

- You are encouraged to prepare research and training plans based on information available at the time of application.
  - You may describe an alternative plan in the event that travel restrictions are in place. For example: field work.
  - Describe contingency plans in Methods section of the Proposal.

3. EVALUATION OF DISCOVERY GRANTS

EVALUATION OF APPLICATIONS

Assessed on three selection criteria, with equal weighting:

- Scientific or engineering excellence of the researcher;

- Merit of the proposal; and

- Contributions to the training of highly qualified personnel (HQP)

Assessed on the reasonableness of requested expenses

Read Section 4 of the NSERC Peer Review Manual for evaluation instructions

WHO REVIEWS THE APPLICATIONS?

- Each application is assessed by five members with different roles; first internal reviewer, second internal reviewer, and three readers. All assigned members, regardless of role, are expected to participate in the deliberations and vote.
  - Assignment of internal reviewers is determined from the Evaluation Group assigned to a DG
  - Joint reviews can assign reviewers from 2 or more Evaluation Groups for DGs, as determined by Evaluation Group members and NSERC staff.
- Input from external reviewers is also sought

Each Evaluation Group (EG) represents an assembly of content experts across the spectrum of a discipline. They provide quality assessment and funding recommendations of DG applications.

1501 – Genes, Cells and Molecules	1507 – Computer Science
1502 – Biological Systems and Functions	1508 – Mathematics and Statistics
1503 – Evolution and Ecology	1509 – Civil, Industrial and Systems Engineering
1504 – Chemistry	1510 – Electrical and Computer Engineering
1505 – Physics	1511 – Materials and Chemical Engineering
1506 – Geosciences	1512 – Mechanical Engineering

The members of each Evaluation Group can be found on NSERC's website.

SELECTION CRITERION 1: SCIENTIFIC OR ENGINEERING EXCELLENCE OF THE RESEARCHER

- Knowledge, expertise, and experience.
  - Stature in the field
  - Research accomplishments
- Quality of contributions to, and impact on, the proposed and other areas of research in the natural sciences and engineering.
  - Research accomplishments
  - Quality and impact of contributions
- Importance of contributions to, and use by, other researchers and end-users
  - Collaborative work
  - Impact of advancing knowledge

SELECTION CRITERION 2: MERIT OF THE PROPOSAL

- Originality and innovation;
  - extent to which the proposal suggests and explores novel or potentially transformative concepts and lines of inquiry.
- Significance and expected contributions to research;
  - potential for policy and/or technology related impact.
- Clarity and scope of objectives;
  - research program with long-term goals rather than a single short-term project or collection of projects.
- Clarity and appropriateness of methodology.
- Feasibility.
- Consideration of equity, diversity and inclusion in the research design, if applicable.
- Extent to which the scope of the proposal addresses all relevant issues, including the need for varied expertise within or across disciplines.
- Appropriateness of, and justification for, the budget.
- Demonstration that the Discovery Grant proposal is conceptually distinct from research support held or applied for through CIHR and/or SSHRC.

SELECTION CRITERION 3: CONTRIBUTIONS TO THE TRAINING OF HQP

- Quality and impact of past training of HQP (e.g., postdoctoral fellows, graduate and undergraduate students, technicians), including:
  - training environment provided for HQP;
  - HQP awards and research contributions;
  - outcomes and skills gained by HQP.
- Quality, suitability and clarity of the planned training of HQP, including:
  - overall training philosophy;
  - research training plan for individual HQP.
- Consideration of equity, diversity and inclusion in past and planned training of HQP.

The Merit Indicators should be used in conjunction with the Peer Review Manual, which outlines how reviewers arrive at a rating.					
EXCEPTIONAL	**OUTSTANDING**	**VERY STRONG**	**STRONG**	**MODERATE**	**INSUFFICIENT**

Excellence of the Researcher

EXCEPTIONAL	OUTSTANDING	VERY STRONG	STRONG	MODERATE	INSUFFICIENT
Acknowledged as a **leader** in terms of research excellence, accomplishments, and service.	Research excellence, accomplishments, and service are **far superior** to others.	Research excellence, accomplishments, and service are **superior** to others.	Research excellence, accomplishments, and service are **significant**.	Research excellence, accomplishments, and service are **reasonable**.	Research excellence, accomplishments, and service are **below an acceptable level**.
Contributions presented in the application are of the **highest level of quality**.	Contributions presented in the application are of **high quality**.	Contributions presented in the application are **above average in quality**.	Contributions presented in the application are of **good** quality.	Contributions presented in the application are of **reasonable** quality.	Contributions presented in the application are **limited** in quality.
Impact and importance of the work is **clearly evident** and **groundbreaking**.	Impact and importance of the work is **clearly evident** and **influential**.	Impact and importance of the work is **clearly evident**.	Impact and importance of the work is **evident**.	Impact and importance of the work is **somewhat evident**.	Impact and importance of the work is **not clearly evident**.

Merit of the Proposal

EXCEPTIONAL	OUTSTANDING	VERY STRONG	STRONG	MODERATE	INSUFFICIENT
Proposed research program is clearly presented, is **extremely original** and **innovative** and is **likely to have impact** by **leading to groundbreaking advances** in the area and/or **leading to a technology or policy** that addresses socio-economic or environmental needs.	Proposed research program is clearly presented, is **highly original** and **innovative** and is **likely to have impact** by **contributing to groundbreaking advances** in the area, and/or **leading to a technology or policy** that addresses socio-economic or environmental needs.	Proposed research program is clearly presented, is **original** and **innovative** and is **likely to have impact** by **leading to advancements** and/or addressing socio-economic or environmental needs.	Proposed research program is clearly presented, is **original** and **innovative** and is **likely to have impact** and/or address socio-economic or environmental needs.	Proposed research program is clearly presented, has **original** and **innovative** aspects and **may have impact** and/or address socio-economic or environmental needs.	Proposed research program, as presented **lacks clarity**, and/or is of **limited originality** and **innovation**.
Long-term vision and **short-term objectives** are **clearly defined**.	**Long-term goals** are **clearly defined** and **short-term objectives** are **well planned**.	**Long-term goals** are **defined** and **short-term objectives** are **planned**.	**Long-term goals** and **short-term objectives** are **clearly described**.	**Long-term** and **short-term objectives** are **described**.	**Objectives** are **not clearly described** and/or likely not attainable.
The methodology is **clearly defined** and **appropriate**.	The methodology is **clearly described** and **appropriate**.		The methodology is **described** and **appropriate**.	The methodology is **partially described** and/or **appropriate**.	The methodology is **not clearly described** and/or **appropriate**.
The application **clearly demonstrates** how the research activities to be supported are distinct from those funded (or applied for) by other sources.					The application **does not clearly demonstrate** how the research activities to be supported are distinct from those funded (or applied for) by other sources or does not clearly demonstrate a program of research in the NSE.

Training of Highly Qualified Personnel

Past Training of HQP

EXCEPTIONAL	OUTSTANDING	VERY STRONG	STRONG	MODERATE	INSUFFICIENT
Past training is at **the highest level** in terms of the research training environment provided and HQP contributions to research.	Past training is **far superior** to other applicants in terms of research training environment provided and HQP contributions to research.	Past training is **superior** to other applicants in terms of the research training environment provided and HQP contributions to research.	Past training compares **favourably** with other applicants in terms of the research training environment provided and HQP contributions to research.	Past training is **modest** relative to other applicants in terms of the research training environment provided and HQP contributions to research.	Past training is **below an acceptable level** in terms of the research training environment provided and HQP contributions to research.
Most HQP move on to **highly impactful** positions that require skills gained through the training received.	**Most** HQP move on to **impactful** positions that require skills gained through the training received.	HQP **generally** move on to **impactful** positions that require skills gained through the training received.	HQP **generally** move on to positions that require skills gained through the training received.	**Some** HQP move on to positions that require skills gained through the training received.	HQP **rarely** move on to positions that require skills gained through the training received.

Training Philosophy & Research Training Plan

EXCEPTIONAL	OUTSTANDING	VERY STRONG	STRONG	MODERATE	INSUFFICIENT
Training philosophy and research training plans are **of the highest quality**: highly appropriate, clearly defined and expected to produce **top quality** results in the overall approach and specific projects for HQP.	Training philosophy and research training plans are **far superior**: highly appropriate, clearly defined and expected to produce **high quality** results in terms of the overall approach and specific projects for HQP.	Training philosophy and research training plans are **superior**: highly appropriate, clearly defined and expected to produce **quality** results in terms of the overall approach and specific projects for HQP.	Training philosophy and research training plans are **appropriate** and **clearly defined** in terms of the overall approach and specific projects for HQP.	Training philosophy and research training plans are **partially appropriate** and **partially defined** in terms of the overall approach and specific projects for HQP.	Training philosophy and research training plans are **not appropriate** and **not clearly defined** in terms of the overall approach and specific projects for HQP.
Challenges related to equity, diversity and inclusion specific to the institution **and** field of research are **clearly described**.		Challenges related to equity, diversity and inclusion specific to the institution **and** field of research are **described**.	Challenges related to equity, diversity and inclusion specific to the institution **and/or** field of research are **described**.	Challenges related to equity, diversity and inclusion specific to the institution **and/or** field of research are **partially described**.	Challenges related to equity, diversity and inclusion specific to the institution **and/or** field of research are **inaccurate** or **not described**.
Specific actions to support the recruitment of a diverse group of HQP **and** an inclusive research training environment are **clearly defined**.		Specific actions to support the recruitment of a diverse group of HQP **and** an inclusive research training environment are **defined**.	Specific actions to support the recruitment of a diverse group of HQP **and/or** an inclusive research training environment are **defined**.	Specific actions to support the recruitment of a diverse group of HQP **and/or** an inclusive research training environment are **partially defined**.	Specific actions to support the recruitment of a diverse group of HQP **and/or** an inclusive research training environment are **not appropriate** or **not defined**.

38

IMPORTANT DEADLINES FOR 2023/24 COMPETITION

ORS Signature Deadline
- Signed RPIF and Discovery Grant
    - Summary of Proposal, Activity Details, Proposed Expenditures and Budget Justification.
- Due to ORS Wednesday, October 25 at 8:30 am

E-Submission Deadline
- You may continue to work on your online application after you have submitted your package to ORS
- Submit final application via Research Portal by Tuesday, October 31 at 12:00 pm

ORS submits applications to NSERC by 4:30 pm (PST) Wednesday, November 1, 2023

For more information about UBC submission details, please visit the ORS website.

CONTACT US

Mark Phillipo

Research Development Officer (SPARC/VPRI)

mark.phillipo@ubc.ca

UBC

Alexander Unterberger

Manager of Research Development (SPARC/VPRI)

alexander.Unterberger@ubc.ca;

UBC

Denise Maines

Research Development and Equity Officer (ORS)

Denise.maines@ubc.ca

UBCO

Purang Abolmaesumi

Sciences and Engineering Research Advisor (VPRI)

purang@ece.ubc.ca

Electrical and Computer Engineering, APSC

Additional UBC Resources:

- **Sample Discovery Grant Library**

- **Discovery Grant Full Application Guide**

- **Previous webinars**

SPARC SUPPORT FOR OTHER NSERC PROGRAMS

In addition to the Discovery Grants, SPARC offers support for the following NSERC programs:

- Alliance Grants
- CREATE (Collaborative Research and Training Experience)
- Discovery Horizons
- RTI (Research Tools and Instruments) Grants

Further details may be found at: https://sparc.ubc.ca/nserc-programs.

Support for NSERC Research Prizes & Awards is provided by the Office of Research Prizes and Awards (ORPA): https://prizes.research.ubc.ca/.

Professor Jeannette Whitton

- Botany
- 1503 – Evolution and Ecology (Chair)

Professor Russ Algar

- Chemistry
- 1504 – Chemistry

Professor Vincent Wong

- Electrical and Computer Engineering
- 1510 – Electrical and Computer Engineering