

HQP EXAMPLES FROM NSERC FUNDED APPLICATIONS!

Contributions to high quality research training at all levels are valued: undergraduate students involved in research, graduate students, postdoctoral fellows, technicians, interns, and research associates.

The new guidelines for Discovery grants is based on two sections: training plan and past contributions (HQP training in *last 6 years only*)

The assessment of the HQP training plan is composed of two components:

- training philosophy
 - research training plan
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- ✓ FOCUS ON QUALITY, SUITABILITY, AND CLARITY OF PLAN
 - ✓ PROMOTE APPROACHES TO INCREASE **EQUITY/DIVERSITY/INCLUSION** AND ADVANCEMENT OF WOMEN AND MINORITY GROUPS, INITIATIVES AT ENSURING INCLUSIVE ENVIRONMENT
 - ✓ **VERY IMPORTANT FOR NEW PROFS WITH LITTLE OR NO PAST HQP**

What is your training philosophy?

Important for early career to be very specific and lots of details

- My training philosophy is committed to attracting/developing/supporting outstanding HQP (list each HQP and specify what they are going to be involved in): list their names if known
- My research program is designed/structured such that HQP learn tools/methods/skills...of high relevance to...and help them develop skills that can be transferred to a non-academic context... communication/critical thinking/leadership skills. Every trainee will be encouraged to communicate...think critically/be creative/innovate... to prepare them for impactful careers in academia/industry/other (list specific opportunities/tasks/roles)
- HQP will participate in different aspects of my research program to develop/acquire/gain an appreciation/ understanding for how different projects contribute to the short-term/long-term goals of my program etc... This will help them appreciate/understand the implications of their research at different levels: theoretical/academia, industrial/practical, community/societal/political.

- Choice/scope of projects will provide HQP with practical/theoretical knowledge to succeed/excel in their field/domain and/or provide necessary expertise/prof development for future career in...
- My approach to mentorship is well defined /very structured. I meet/will meet regularly with HQP individually (how often) or in groups (how often) to discuss their progress, guide them in professional development eg. internship/elective course selections, selection of conferences, provide constructive feedback, brainstorming/troubleshooting/planning, thesis support and revisions ...
- The training I provide is appropriate/valuable to both the HQP and my research program (List how each will benefit)...HPQ will be encouraged to attend workshops, collaborate and interact regularly with private and public sectors (industry, government agencies)...My research program will benefit from different ideas and innovation due to fruitful team interactions, and young and bright minds that keep me challenged with new ideas and challenging discussions for my research team... (give specific examples of insights gained from HQP questions or suggestions)
- Task distribution will foster collaboration among group members, to encourage leadership, to allow HQPs to gain mentoring experience (list specific tasks for each HQP...what collaboration will occur). HQP#1 and #2 will work together on...
- My projects are designed to encourage training and external collaborations outside my main group... (list groups outside immediate team and how they will be involved) eg centralized training opportunities for HQPs at University, specialized training as intern or job shadowing, outside facilities or international training, etc...
- My training philosophy focusses on interdisciplinary teamwork and collaboration ... (describe specific examples of groups and multi-disciplinary interactions that will occur for each HQP)
- My approach to training and mentoring HQP is for them to become active partners in my research program...participate in project design and troubleshooting/brainstorming activities, analyzing/reporting/presenting data. Contribution to publications/conference presentations/knowledge dissemination
- All HQP positions in my group adhere to University/Faculty/School EDI policies/ expectations for inclusive work environments. I have already recruited # international students, # students are women, # minority groups
- The composition of my group highlights my commitment to EDI ensuring gender equality and opportunities to international students. My current group is composed of % females. Foreign HQP represent % of my program.
- I am committed to recruiting students of different gender and origin for an inclusive research and work environment. The countries of origin of my research team are very diverse (list countries), with opportunities for everyone to benefit (specify how)...
- Encourage female HQP to become involved in initiatives specific for women, to find mentorship and engagement opportunities (list specific examples of organizations or associations for women)

Describe your research training plan

Important for early career to be very specific and lots of details

- I plan to support/hire/supervise # graduate students, and # undergraduate, etc...(be specific as to how many trainees/group members are needed for the scope of your project): list names if known

- During my first/second/third/etc year, I will delegate/assign/specify the following long-term goal and short-term goal to each of the HQP: eg. PhD students will...MSc students will...etc...
- Training of HQP is central to my research program with over % of the budget allocated to HQP for....(specify costs for travel, international exposure, prof development, etc)
- My training plan will ensure adequate integration/involvement of HQP, the group composition and project assignment will be logical/sensible taking into consideration...eg specific work appropriate for HQP level, training plan appropriate for group size... (list specific approach)
- HQP projects/tasks are structured/tailored for each HQP to focus on a specific aspect of the research program with defined short-term and long-term goals (list specific goals for each HQP in program).
- HQP will receive critical but constructive feedback to keep them motivated, challenged, engaged...
- With a large research group, I will use a clear approach to management and involvement with the group... HQP will gain/benefit skills/knowledge from different types of group interactions...OR with a smaller research group, I will be able to spend more individual time with each HQP, this will allow for... (mention advantage of one-on-one interactions, focus on specific needs of the HQP, more time to solve a certain problem, more coaching and individualized guidance).
- If a thesis topic/project goes beyond my area of expertise, I will encourage co-supervision to support/maximize/complement methodology training and knowledge gain. My role in co-supervision is to provide...(list specific contribution)
- Part of my training program includes... industry partners/government involvement/ other organizations... working at different levels...will encourage this interaction to bridge research and practice, helping HQP develop communication/interpersonal/collaboration/teamwork skills, and build valuable contacts and networks outside academia.

Explain training environment you'll be providing to your HQP

- HQP will be encouraged to develop leadership skills...take charge of group meetings, planning research/program activities, involvement in student councils/associations.
- To enhance communication skills... will provide opportunities to communicate their ideas in a simple and consistent way, develop abilities to communicate in lay language, and to respond to peer questions, and improve oral communication skills by presenting their work/literature articles to peers in seminars/journal clubs...at national and international conferences, with opportunities to win awards/recognition for presentations.
- HQP will have to stay current in the field ..., the latest technological advances in knowledge, laboratory/research techniques and ...Participation in training programs/workshops (list specific opportunities available at university, faculty or part of your network)
- The ability to continually update skills is important for personal and professional development... (eg internships opportunities, job shadowing programs, etc...)
- My approach will enhance training by ensuring a collaborative and interdisciplinary environment...(list specific examples of local/national/international collaborations, list STEM groups, various expertise and how HQP will benefit for their future career goal)

- My training approach provides opportunities for HQP to be involved in innovative research within an interdisciplinary/collaborative environment, and engage in...including conceptual/theoretical/practical contributions. (Highlight collaborative aspects of the training: co-authorship, publications, patents, key presentations)
- Regular meetings will be held with other groups in the school/program/faculty to encourage knowledge exchange/methodology/research findings sharing and problem solving opportunities/approaches, and allow HQP to gain experience presenting to/ discussing with a varied audience outside core research area... (list seminar series, journal clubs, other)
- HQP will be encouraged to present their work at peer-reviewed international conferences (mention how often, where, details of conference), especially participate in student competitions (eg. thesis competition at Telfer, other central competitions), an essential aspect of their training/development...while providing indispensable networking opportunities (Describe specific poster or oral presentations if past contributions)
- My training environment creates opportunities for advanced training, continuous education, and professional development of graduate students (list specific examples) who will strengthen knowledge base and scope for innovation (can specify field/industry/etc).
- My research training provides development opportunities that enhance HQP training environment since they are encouraged to participate in science outreach/engagement activities/interdisciplinary research/regular participation in journal clubs&seminar series/deliver research seminars&presentations to peers for feedback and to engage in fruitful discussions ... (list specific opportunities available at Telfer, in uOttawa, in community), contribution to newsletters/ student associations/opportunities for informal discussions... (list all activities to encourage professional development and give examples)

HQP awards and research contributions

- HQP will have opportunities to publish/present/share/collaborate... (emphasize peer-review)...high impact journals/work ... exposure to networking opportunities... (specify how you maximize exposure in your field)... that could be a stepping-stone for an academic/non-academic career... **(IMP FOR EARLY CAREER IF NO HQP HISTORY)**
- While working under my supervision HQP#1 was awarded several scholarships... (Specify if internal competitions, external competitions, other). He/she went on to...HQP#2 received a very prestigious/prominent award and distinction for his/her contribution to...Given this achievement he/she was able to pursue a...
- Our research objectives (list each one separately) propose an unparalleled/unprecedented/unique/ unmatched...(be clear of what is innovative/important) approach towards solving existing problems/gaps... which will give HQP the opportunity to produce highly original/innovative/ unique contributions to knowledge/field/practice...(list specific publications, book chapters, patents, etc...)
- The originality/creativity/ingenuity of my research area... allowed/ will allow... them to reach a broad/diverse readership by publishing in well-ranked peer-reviewed scientific journals (list specific examples), participating in world-renowned conferences...

- The timely dissemination of their research findings will be encouraged/supported to help improve their writing/presentation/critical thinking skills and maximize their exposure to the scientific community... (list specific examples of works completed or in production)
- HQP will be encouraged to apply to graduate awards/scholarships, travel awards, tuition scholarships ... (list specific internal and external opportunities available) ... Telfer engagement award recognizes an exemplary doctoral student who demonstrates continued initiative in applying for funding and scholarships, leadership and engagement in the PhD Program, academic success, and persistent research progress. Telfer Duncan and Cross award recognizes the quality and impact of a student's publication in a peer-reviewed journal ... (add other external awards and be specific in highlighting each award, scholarships, and fellowships won by HQP under your supervision)
- Over the past 6 years, my students have obtained several awards/scholarships... best poster or seminar, TriCouncil scholarships/awards, distinctions, etc... (explain how your research program contributed to this success, especially highlighting major awards like TriCouncil)

Outcomes and skills gained by HQP

- HQP will have developed a number of transferable skills (leadership, communication, critical thinking, innovation, ...) essential to pursuing industrious careers... (highlight most important skills for a specific career that your program targets)
- HQP will improve writing/communication skills by helping to draft manuscripts, methodologies/protocols, research reports, grant applications, and writing their thesis... (Emphasize the feedback opportunities from PI/peers/co-supervisors/other imp for improvement and prof develop)... The contribution to # publications/conferences/ patents/technical reports... provides evidence of their intellectual development and potential (give specific examples of the number and quality of works produced, and emphasize your contribution to development of these skills and abilities)
- HQPs under my supervision will develop both practical and professional skills invaluable to a career in... (list each and what it brings to the field or career)
- HQP have learned an extensive set of tools that are highly relevant for... (list the different skills acquired for a specific industry/position/career), these skills will be sought after by... (list future employers and career potential)
- Several of my HQPs have gone onto careers where they coordinate and conduct research... (list specific examples)... My training program contributed to his/her research career by helping acquire (list skillsets)... Some of my HQP progressed onto advanced degrees (PhD or postdoctoral fellowships) leading into an academic profession...
- **IMP FOR NEW PROFS**
- Although I have not yet/only recently begun my appointment as a PI, I had the opportunity as senior PhD/Postdoctoral Fellow to supervise the work of several/many undergraduate/MSc/PhD during my training... these trainees progressed to very successful positions as... (highlight your contribution to their progression and success)
- During my ... at ... I supervised the work of... My role was to define/establish/assess the needs of the lab/project for... and to assign/support/ monitor tasks accordingly... This student/trainee was accepted in graduate school/industry/academic position in research and benefited from my mentorship by developing/acquiring/learning... (list specifics) to progress to... (highlight success)

- I supervised the work of...who worked on...and then took over my pilot study/project/work on...I am still actively advising him/her through weekly/monthly discussions, skype/social media/other interactions...(emphasize that the skills gained / abilities developed during the training you provided is evidence of quality/success of your training abilities)
- During my PhD/postdoctoral work at...I helped supervise # undergraduate/ # MSc/summer interns/ visiting students/ junior staff... (make sure mention how many within past 6 yrs). The first student joined the group as an undergraduate/MSc student in...and then became an MSc/PhD student under my co-supervision. I initiated his/her project on...and was his/her main technical advisor during thesis. He/she is now working towards a PhD on the same project/at... University in Europe/Asia/other (highlight the progression of research training). The second student joined the group...He/she obtained degree (be specific as to the level of trainee) and now occupies a research position in industry (list specific details), my contributions to his/her training was.... (be very specific as to how their progression in research was a result of your contributions).

Table 1: Examples of transferable competencies

Personal and Professional Competencies	Approaches to Help Develop Competency
Leadership, teamwork	participation in student association; taking charge of scheduling and overseeing group meetings; assigning tasks for collaborations on group projects
Oral communication skills	Participating in seminar series, international conferences, oral competitions like SSHRC storytellers, practicing communication using lay language (thesis competition at Telfer, group discussions), participating in Telfer forums
Critical thinking	Participating in peer-review process of manuscripts/grants/seminars, troubleshooting discussions, brainstorming activities, project design
Writing skills	Preparing drafts of grant applications, ethics applications, thesis, manuscripts, scholarship applications, reports/summaries of articles, writing workshops
Mentoring/supervising/management	Senior HQP responsible for progress of juniors, student ambassador program, student associations/councils, planning student events
Setting deadlines/Meeting goals/Time management/Organization/Prioritizing	Planning and scheduling degree requirements (coursework, PhD comp, thesis proposal, oral defense), prioritizing and working on strict deadlines (applications for scholarships, ethics approvals), setting long-term and short-term research goals and regularly evaluating progress
Analytical skills	Collecting data and analyzing results, preparing graphs/charts/tables, developing/using specific tools/equipment, learning to assess quality/reliability/validity/sustainability of work