

Top Ten Tips for Discovery Grants

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10. Review Discovery Grants

The best way to learn to write a Discovery Grant is to critically review DG's. This will familiarize you with the many many components of a DG application (did I mention there were 'many' parts?). This will also familiarize you with the [Merit Indicators](#) that the Evaluators use in assessing applications. Superficial cheerleading reviews are discounted by the Evaluators. But measured and thoughtful reviews are invaluable and persuasive, particularly when the Evaluation Group lacks expertise in the research area.

So agree to provide thoughtful and measured reviews as an External Reviewer. You can also get practice by reviewing your colleague's DG before they send submit their application.

9. Write a 'package'

A Discovery Grant application is evaluated on [three criteria](#): the Excellence of the Researcher; the Merit of the Proposal; and the Training of Highly Qualified Personnel. The score for each of these criteria is built on evidence from various parts of the application. So once you have assembled the many many parts of the DG application (did I mention there are many parts?), look through the entire package to make sure that it tells a consistent story.

8. Budget, Smudget

Don't sweat the budget. Don't index for inflation. Don't apologize that you will have to do less if you get less money than you ask for. Being 'cheap' does not increase your chances for success. Being 'cheap' just means you will get less money than NSERC would have given you based on your scores.

NSERC scores your application using the [Merit Indicator descriptions](#). View the budget as part of the methodology – it should be accurate and detailed, but should ask for 150-200% of what you expect to get – but not more than \$150 k - the top amount possible. (Check recent [DG grant competition results](#) to get an idea of what you can realistically expect.) Over-asking allows you some scope to discuss a significant amount of research.

[www.nserc-crsng.gc.ca/NSERC-CRSNG/FundingDecisions-
DecisionsFinancement/ResearchGrants-SubventionsDeRecherche/Index_eng.asp](http://www.nserc-crsng.gc.ca/NSERC-CRSNG/FundingDecisions-
DecisionsFinancement/ResearchGrants-SubventionsDeRecherche/Index_eng.asp)

Ensure that your budget is consistent with both your proposal and your HQP plans.

7. Write for a general audience.

Five members of the [Evaluation Group](#) will independently score your application on each of Excellence of the Researcher, Merit of Proposal, and Training of HQP. The median of the five scores for each of the [Merit Indicators](#) determines how much money you get. The Evaluation Group has a limited number of people in any given field of chemistry. So most of the people scoring your application are not experts in your field of research. Probably only 1 would have direct enough expertise that they could review one of your papers, 2-3 of the others are probably analytical chemists but not in your field of expertise, and the remainder will be non-analytical but who are familiar with your field or an aspect of your proposed research.

http://www.nserc-crsng.gc.ca/NSERC-CRSNG/Committees-Comites/programs-programmes_eng.asp

So, do not assume that the Evaluators know the quality of the journal *JCA* or the nature of the *IICS* conference. You need to tell the reader the impact factor or rank of the journal (often in Additional Information on Contributions) and that *IICS* is an international conference (by writing out the conference name in full in the Presentations (orals) and Conference Publications (posters)).

6. One more 'submitted' paper will not help your application.

We all want to get a few more papers out before we submit our NSERC DG application. However, the DG Evaluators ignore submitted papers, as they have no idea if these submissions will ever be accepted or published. Further, your "Excellence of Researcher" score is due only in part to the number of papers. And the number of papers associated with each score (Strong, Very Strong, etc.) is very broad, with considerable overlap between the distributions. So, one more paper is unlikely to make a difference.

The final, and most important, reason to not push out that last paper is that the paper will consume time that you really need for the many many other components of an NSERC DG package – all of which will have a much greater impact on your funding. (did I mention there were many components?)

5. Address each item in the HQP Merit Indicators.

Many applicants do not spend enough time or attention to the HQP merit components (probably trying to get one more paper out). To be successful you must address the following [Merit Indicators](#):

Do your HQP contribute to research? (This is indicated by the * after HQP co-authors in your CCV Presentations (orals), Publications, and Conference Publications (posters)).

Do your HQP move on to good careers? "Present Position" in the CCV holds many more characters than it looks like. Use this space to detail your HQP's career successes from your lab

to their current position. Use LinkedIn and your students' Facebook to track down your past students.

How did the skills gained in your lab lead to that great career? Emphasis the link between the skills you imparted and the students' current career in the Past Contributions to HQP.

Is it clear that your research plans will impart similar valuable skills? Your HQP Training Plan must clearly describe how you ensure that your HQP acquire both the technical skills and the soft skills (literature, communication, professional skills, leadership) that are needed to successfully publish high quality research and to move on to great careers. The steps in these plans should be validated with short statements of how that skill lead to a specific past HQP's success.

(told you there were many components.)

4. Address each item in the Proposal Merit Indicators.

The Evaluation Group uses the [Merit Indicators](#) to determine the score for your proposal. Poor scores often reflect that one of the following elements was missing.

Is your research original and innovative? Most of your Evaluators are not researchers in your field. So provide them with the background they need to appreciate the originality and innovation in your proposal.

Will your research have impact or lead to advancements? Be explicit regarding what the outcomes of the research will be. But the Evaluators are not experts. They need context. (e.g., my claim that "The column to be developed will have 100,000 plates/m." probably means nothing you. Whereas "The column to be developed will have double the efficiency of the best commercial column." would be much more meaningful.

Are your Long-Term Goals evident? Your Long-Term Goals are a statement of what your career research goal is. The Long-Term Goals usually reflects your entire research efforts for many years in the past and for the many years in the future, and encompasses other grants from industry or other government programs.

Are the Short-Term Objectives planned? These Short-Term Objectives are the outcomes of this 5-year Discovery Grant. For many, these Short-Term Objectives are the fundamental aspects of the applicant's overall program – the one that generates the new methods and techniques that later get spun out for funding from other more applied agencies. But the distinction between your other current grants and the DG proposed research must be clear.

Is the methodology detailed? The Evaluators are trying to figure out if you will be successful at the proposed work. In fairness to other applicants, they cannot just 'trust you'. State what equipment you will use. Do you have it, or how will you get access to it? Will you have it built? If so by who and with what design? What reagents will you use? Does it need to be

synthesized or is it commercially available? Who will work on each project (BSc, MSc, PhD)? What techniques or skills will they learn?

Is the budget reasonable for the proposed research? Are the items in the methodology (equipment, facilities, reagents, manpower, publication [consider open access requirements], conferences) encompassed in the budget? Is it clear that you are not asking DG for funds for the same projects as funded by your other grants? (Not sufficient to just say “No overlap” in the Relationship to Other Funding, particularly when the grant titles sound similar.)

(now you see there are many many components)

3. Evaluator should be able to find all sub-items in the Merit Indicators in 1 minute.

The Evaluators read over 50 applications. They have only 3-4 hours before Competition Week to review each application. During Competition Week, each application is discussed for 15 minutes. If a particular item in the [Merit Indicators](#) comes up during that discussion, the Evaluators need to be able to quickly find it in your package. So, phrases such as “Long-Term Goals”, “Short-Term Objectives”, and “Methodology” must be easy to find.

2. The plural of ‘anecdote’ is ‘data’.

Are your accomplishments reasonable, solid, superior, or far superior? This is what the Evaluator must decide. But the Evaluators are not experts in your field. So just telling them the science in the Five Most Significant Contributions is not sufficient. Rather give them data. Data might comprise numerical indicators such as citations, or number of invitations, or licencing agreements. But ‘data’ might also be anecdotal, such as invitations to review papers or to an editorial board, or conference committee. Or it could be expert witness or consulting requests. Or even a flattering comment from a journal reviewer or a leader in the field. Each alone tells only part of the picture, but collectively they establish a pattern that reflects your Excellence.

Anecdotes can be equally effective at demonstrating excellence in HQP Training. A student that received 4 job offers before graduation. Or a conference or paper award. Or a kind note saying how transformative working with you had been. All of these anecdotes combine to create a concrete pattern of excellence in training.

1. Read the Discovery Grant Merit Indicators

http://www.nserc-crsng.gc.ca/doc/Professors-Professeurs/DG_Merit_Indicators_eng.pdf

The Evaluators use the [Merit Indicators](#) to evaluate your: Excellence of Researcher; Merit of Proposal; and Training of HQP. The Merit Indicators sound subjective...and they are. But more often than not, poor scores result from an applicant failing to address one of the sub-items in the Merit Indicators, rather than not knowing precisely what to say.

The CCV is excellent at accumulating massive amounts of 'data'. By understanding the Merit Indicators, you can mold this data into the 'information' which will build your DG case.

And if you are not applying for an NSERC DG this year, remember that the best way to understand the Merit Indicators is to apply them to someone else's grant. So when invited, review those Discovery Grants.