

Evaluation of the Industrial R&D Fellowships (IRDF) Management Response

This document constitutes the NSERC management response to the report on the Evaluation of the Industrial R&D Fellowships. The evaluation was prepared by the consulting firm Ekos Research Associates Inc.

Introduction and Background

The IRDF is part of a cluster of tools belonging to NSERC's Training In Industry Program; the others being the Industrial Undergraduate Student Research Awards (IUSRA), and the Industrial Postgraduate Scholarships (IPS).

These awards provide opportunities for undergraduate and graduate students as well as postdoctoral fellows to work with industrial partners in addressing private-sector challenges. The tools are intended to integrate students into the private sector, allow them to apply their theoretical knowledge and skills towards solving practical industrial problems, while benefitting companies by providing them access to relevant research expertise.

The IRDF provides financial support to enable the most promising recent doctoral graduates to engage in research and development in the private sector. The objectives of this fellowship are as follows:

- to encourage excellent recent PhD graduates in science and engineering to seek careers in the Canadian private sector;
- to make the Canadian private sector more aware of the capabilities of Canadian universities and university research;
- to facilitate the transfer of expertise and technology; and
- to provide an opportunity for PhD holders seeking university careers to gain research and development experience in the private sector.

By placing highly qualified personnel in Canadian organizations, these fellowships promote the development of the organizations' long-term research capacity (especially in small- and medium-sized organizations).

Findings

The evaluation overall was very positive. The IRDF program is considered to be relevant and meeting an ongoing need. While postdoctoral experience is not essential for research-intensive positions in industry, the program contributes to the stimulation of R&D and to the promotion of the potential skills and value of PhD candidates to industry. The IRDF program was found to be particularly beneficial to SMEs and to private companies with an R&D focus. Finally, the findings suggest that the administration of the program is working well overall, but further improvements could help ensure that the most effective and efficient means are being used to achieve program outcomes.

The table below presents the recommendations put forth in the evaluation, and NSERC's Management Response to these recommendations.

| Recommendation | Response | Comments | Action Plan | Responsibility | Timeline |
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| <p>1: Develop and implement a communications plan to increase awareness and understanding of the IRDF program among potential host organizations</p> <p>The evaluation report noted that awareness is a key barrier to participation, with many potential industrial hosts being unaware of the IRDF. Additionally, among potential industrial host organizations, some misperceptions about the IRDF exist that may be preventing wider participation. The evaluation report noted that a key target for communications should be small and medium organizations with some R&D activity or capability in Canada. It was also suggested that NSERC could promote the program directly one-on-one; via workshops, trade shows and conferences; or indirectly via university collaborators. There may also be room to increase awareness of this program among PhD level candidates who could potentially participate in the program.</p> | Agree | <p>NSERC has recognized this issue and has already adopted measures aimed at increasing the visibility of the IRDF.</p> <p>In 2009, following a year of consultations with industry, NSERC launched its Strategy for Partnerships and Innovation (SPI) to support industrial innovation. A key component of this Strategy is Connecting People and Skills, which aims to connect Canada's graduates to businesses, thus improving their employment prospects by ensuring they have the skills businesses value.</p> <p>As a key aspect of SPI, the IRDF was integrated into the suite of NSERC's Research Partnerships Programs, given the industrial focus of the IRDF. Furthermore, as part of SPI, NSERC's five Regional Offices, located across the country, were assigned to RPP with a refocused mandate which aligns with SPI; that is to build awareness of NSERC within the private sector; to increase the number of academic-industry partnerships; and to increase participation in NSERC's research partnerships and industrial scholarships programs.</p> | <p>Since SPI was launched in November 2009, NSERC's Regional Offices have been regularly promoting the IRDF through their interactions with companies, industrial associations and academia. Particular attention is being paid to companies, primarily small and medium sized businesses, that have never partnered before with NSERC or have partnered in a limited way to ensure they are aware of the IRDF opportunity. Staff has begun to hold specific awareness and connector events for PhD students and companies and will be looking for further opportunities to make graduate students, their supervisors and companies aware of this award.</p> <p>As a result of the above outreach to date, NSERC has seen a 60% increase in the number of IRDF applications since SPI was launched, following the IRDF evaluation period of 2000-2008.</p> | RPP-Regional Development -& NSERC Communications (as necessary) | Implemented |
| <p>2: Increase the value of the award by increasing the minimum host contribution amount.</p> <p>The evaluation noted that there is broad support for an increase in the minimum award value provided to IRDF recipients to make it more attractive to potential candidates. Given that most fellows already receive more than the minimum award value, as a result of higher-than-minimum contributions from their host organization, the evaluation put forth that it would be appropriate to increase the host contribution to \$15,000 per year, with a view to a potential further increase in the future.</p> | Agree | NSERC agrees with this proposed change, and will change the minimum contribution required from host organizations from \$10,000 to \$15,000 per year. | Program literature and delivery processes will be updated to reflect this change. | RPP | April 1, 2013 |

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| <p>3: Consider expanding the program to candidates at the Masters level if resources are available to permit expansion.</p> <p>The evaluation found that current host organizations have expressed an interest in seeing the program expand to incorporate candidates at the Masters level. It was pointed out that an expansion of the program to the Masters level may attract additional interest and participation in the program. However, it would be important to monitor this change to ensure that the recruitment of Masters candidates does not replace those at the PhD level.</p> | <p>Agree.</p> | <p>Expansion of the IRDF program to include Masters' level graduates has been considered by NSERC in the past. The main concerns have been, and continue to be: the lack of available budget to cover the costs of such an expansion; and the possibility that companies would hire Masters graduates at the expense of PhD graduates. Canadian companies, compared to those in most other OECD countries, do not tend to hire PhD graduates and hence their internal capacity for R&D is reduced. The current focus of the program on candidates at the PhD level is considered an important feature of the IRDF, as it specifically encourages PhD graduates to seek careers in the Canadian private sector, and these same private sector firms to host and hire PhD level employees.</p> <p>There is also concern that such a program may overlap with existing federal programs such as HRSDC's Youth Employment Strategy which places graduates in companies to improve their skill set and address a company need. Given that the recently released, "<i>Innovation Canada: A Call to Action</i>" report spoke of a need to reduce program proliferation within Federal Government support for R&D, NSERC would not be willing to create a new initiative when support for this area may already exist.</p> <p>It is further noted that NSERC currently offers an Industrial Postgraduate Scholarship that allows a Masters graduate to spend up to 20% of their time in industry while pursuing their doctoral degree.</p> | <p>NSERC would consider creating a programming element to support Master's level graduates if:</p> <ol style="list-style-type: none"> 1) additional resources were to be made available; 2) mechanisms could be put in place so as not to reduce the number of postdoctoral fellows supported; and, 3) this new programming element would enhance and complement, rather than overlap, other federal programming. | <p>RPP -&- NSERC Senior Management</p> | <p>n/a</p> |

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| <p>4: Ensure ongoing flexibility in the requirement that IRDF recipients focus on one research project to accommodate the needs of host organizations, and communicate this flexibility clearly.</p> <p>The evaluation report noted that the limitation that IRDF recipients work on a specific research project is the aspect of the program design that garners lower satisfaction ratings from host companies. Moreover, some hosts identified a desire to expose the IRDF fellow to all research projects of the organization during their fellowship to increase their exposure to their business and to research at different stages of development. Others noted that projects may alter or require a change in direction based on initial data, or that research can change directions quickly in an industrial environment. Furthermore, half the IRDF recipients surveyed reported involvement in other projects during their fellowship, and these fellows are more apt to remain employed with the host organization.</p> | Agree | <p>It is important that there be some flexibility within the IRDF program to allow candidates to gain valuable experience within their host company. In fact NSERC currently accommodates this need to a certain extent by allowing fellows to spend their time working on up to <u>two</u> "challenging projects in a work environment that will provide [the fellow] with an opportunity to grow as a researcher." This also includes activities related to research project management. Furthermore, NSERC allows host organizations to reassign fellows to special projects, so long as they are short term and do not take up more than 20% of the fellow's time. As is true of other NSERC partnership programs, modifications to the proposed research as a result of new data or changes in the company's business strategy or environment are usually accommodated through consultation with NSERC staff. This flexibility is clearly not well understood by the community.</p> <p>However, in order to ensure that the fellow has the time and opportunity to grow as a researcher by further developing and enhancing his knowledge and research skills in a given field, it is important that he or she concentrate on one or two big projects that are considered to be scientifically and technically meritorious by the peer review community based on a detailed description in the IRDF application.</p> | <p>The current program flexibility (allowing up to two research projects, and allowing up to 20% of the fellow's time to be spent on special projects) is not currently included within the IRDF program description on the NSERC website http://www.nserc-crsng.gc.ca/Students-Etudiants/PD-NP/Industrial-Industrielle_eng.asp (although it does appear elsewhere on the NSERC site: within instructions for preparing an IRDF application; and within the IRDF Award Holder's Guide).</p> <p>NSERC will modify the IRDF program description to clarify, and make more evident, the flexibility that currently exists within the program.</p> | RPP | April 1, 2013 |

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| <p>5: Consider alternate or additional matching or recruitment processes to complement the inventory of candidates.</p> <p>NSERC currently maintains an Inventory of Pre-Approved IRDF Candidates. However, the evaluation determined that very few host organizations use the inventory to recruit a fellow. Host organizations more often find an appropriate candidate through university contacts, or are approached directly by the fellow. The evaluation noted that it would be beneficial to create opportunities for potential fellows and hosts to learn of the program and connect with each other through university collaborators.</p> | <p>Agree</p> | <p>As noted within the evaluation report, this recommendation overlaps with Recommendation 1, in that the overall promotion of the IRDF program could simultaneously maximize opportunities to match potential candidates to fellowship opportunities.</p> <p>Many of the respondents surveyed for the evaluation may not have been aware or have had the opportunity to use the Pre-Approved Candidate list as it was implemented towards the end of the evaluation period. In the past two years, IRDF applications have increasingly involved candidates from the pre-approved list. NSERC's regional offices have been specifically promoting this Inventory as a tool for recruitment.</p> <p>Potential IRDF candidates can identify organizations that have hosted an IRDF in the past through NSERC's Award Search Engine (accessible through the NSERC website).</p> <p>An additional measure to be undertaken that will provide additional flexibility for companies in their recruitment and will likely complement the current Inventory of Candidates, will be to open up the IRDF to accept foreign PhD graduates who have graduated from a Canadian post-secondary institution and have obtained a Post-Graduation Work Permit. Several companies have indicated to NSERC that opening up the IRDF to accept such fellows would be of benefit.</p> <p>(Further information on the Post-Graduation Work Permit can be found at http://www.cic.gc.ca/english/study/work-postgrad-who.asp.)</p> | <p>As per Recommendation 1, NSERC's Regional Offices have begun and will continue to specifically promote the IRDF and the pre-approved Inventory through their interactions with the private sector and academia. Staff has begun to hold specific awareness and connector events for PhD students and companies and will be looking for further opportunities to increase awareness and potentially match interested candidates and companies.</p> <p>NSERC will modify the IRDF program description to indicate that foreign PhD graduates who graduated from Canadian post-secondary institutions and have obtained a Post-Graduation Work Permit will be eligible to apply for an IRDF.</p> | <p>RPP -&- RPP-Regional Development</p> | <p>Implemented</p> <p>-&-</p> <p>April 1, 2013 (For Post-Graduate Work Permit)</p> |