

Response to the Evaluation of the Research Tools and Instruments (RTI) Program

1- Introduction

The Federal Government's Science and Technology Strategy "*Mobilizing Science and Technology to Canada's Advantage*", was published in the spring of 2007. It emphasizes Canada's strong research base as well as stating the need to maintain the country's leadership in public R&D performance by making new investments in R&D. The report highlights that higher-education institutions must have the leading-edge research equipment and facilities required to compete with the best in the world. The findings resulting from the RTI evaluation suggest that the RTI program is working towards the achievement of its objectives to enhance the discovery, innovation and training capability of academic researchers and therefore is very much in line with the objectives of Canada's Science and Technology Strategy.

The report has identified a number of key findings which are highlighted below:

- RTI funding leads to more, faster and more in-depth research as well as better trained HQP;
- NSERC's RTI and Major Resources Support (formerly the MFA) programs, along with CFI, have made significant contributions to improving the state of university equipment over the past decade;
- A significant proportion of the existing equipment infrastructure will require replacement over the coming five years;
- Any modification to NSERC's priorities and strategies with respect to RTI will have profound consequences on the university research system;
- Findings suggest that NSERC's RTI program does not duplicate CFI efforts;
- The effect of the RTI 2-3 moratorium has not been catastrophic as it has been compensated in part by the use of CFI funds. It has, however, made it more difficult for researchers to obtain funding for mid-range to expensive pieces of equipment.

2- Responses to the Recommendations of the RTI Evaluation

Recommendation 1: *Increase and Stabilize the funding of RTI-1*

The report suggests, not surprisingly, that a significant proportion of the existing equipment will require replacement in the next five years. While the RTI program is not the only mechanism that provides funding for research equipment (CFI is also a significant player), the study has highlighted that NSERC remains the main player for the support of what can be referred to as "small" equipment (i.e. equipment worth \$150,000 or less), whether it is the replacement of existing equipment or the acquisition of entirely new equipment¹. The findings

¹ It is important to note that the replacement of existing equipment and the acquisition of state-of-the-art equipment are not mutually exclusive. The scale of the equipment funded is what differentiates NSERC and CFI.

suggest that CFI is regarded as filling the need with respect to the acquisition of large state-of-the-art research equipment, but not the replacement of existing equipment.

NSERC's aim with respect to RTI-1 has been to set a yearly budget of at least \$12M, to be augmented from year-end funds (normally \$8-10M). This usually enables a funding rate of at least 20-25%. NSERC considers this to be the minimum in order to have a viable competition. Funding rates below 20% raise the question of whether it is worth having a competition considering the burdens associated with preparing and reviewing applications. Table 1 shows that the last five RTI-1 competitions have resulted in funding rates higher than NSERC's minimum target of 20-25%. In fact, funding rates over that period have been of 30% or higher. NSERC has therefore been able to meet at least one third of the demand for RTI-1 over the last five years and considers that the program has been adequately funded. It is also important to mention that other NSERC programs do fund pieces of equipment that would be eligible to be applied for through the RTI program. In 2006-07, approximately \$26M has been spent on equipment from programs other than RTI.

**Table 1 – Results of RTI-1 Competitions
2002-2008**

Year	Requests (#)	Awards (#)	Success Rate	Requests (\$M)	Awards (\$M)	Funding Rate
2008	1577	580	37%	113	38	33%
2007	1532	764	50%	108	49	46%
2006	1426	605	42%	98	36	37%
2005	1390	588	42%	92	35	38%
2004	1312	464	35%	84	25	30%
2003	1476	315	21%	95	18	18%
2002	1338	397	30%	78	20	26%
Average	1437	533	37%	95	31	33%

The second part of the 1st recommendation relates to the stability of the RTI-1 budget over the years. Table 1 shows that the budgets for the period 2002-08 have varied, with a trend above the minimum target rather than below. These fluctuations can be explained by the fact that RTI awards do not normally create multi-year commitments so NSERC can use some of the unspent funds from other programs at the end of each fiscal year (i.e. programs that do not fully meet their initial commitments), to help finance the RTI competition.

Recommendation 2: Maintain the RTI 2/RTI 3 moratorium as long as CFI programs are active in this area

The evaluation’s findings indicate that there is little overlap between the RTI and CFI programs (provided the RTI-2/3 moratorium remains in place). In fact, the report discusses the existence of a gap between the programs. CFI supports large-scale, state-of-the-art projects within university strategic priorities while NSERC supports small scale pieces of equipment. The gap is mainly in funding availability for large scale projects outside university strategic priorities.

NSERC considers that the RTI 2-3 categories cannot be given a similar priority than RTI-1. Without underestimating the need for larger pieces of equipment, other issues, such as providing appropriate funding to new applicants, and being able to fund research in the Government’s new priority areas must be considered of higher priority. The evaluation confirmed that despite the moratorium on RTI-2/3, a significant portion of the need for equipment worth more than \$150,000 was satisfied by the CFI, although it is acknowledged that some research groups may have been unable to acquire major equipment and have seen their ability to conduct cutting-edge research somewhat impaired. The evaluation also concluded that the moratorium by and large did contribute to keep the overlap between NSERC and CFI programs to a minimum. NSERC is now formally terminating the RTI-2/3 components (with the exception of subatomic physics). In the future it will be possible to recreate these components as before or in a different configuration, should a compelling case be made.

Since the 2006 competition, in an effort to somewhat counter the impact of the moratorium, NSERC has been accepting applications under Category 1 for equipment whose total net cost is up to \$250,000, provided that the applicant is able to secure funding from other sources to bring the amount requested from NSERC to \$150,000 or less. In the 2007 and 2008 competitions, the possibility of applying for pieces of equipment worth up to \$250,000 generated 53 and 67 applications respectively. Table 2 shows the results of these applications.

**Table 2 – Applications for Equipment Costing more than \$150,000
The “\$250,000 Rule” – Competitions 2007 and 2008**

Year	# of applications	Total # of applications	% of application	Average Cost	SR	\$ Awarded
2007	53	1525	3%	\$178,272	42%	\$3,102,831
2008	67	1577	4%	\$184,789	34%	\$3,615,982

Table 2 shows that proposals fitting under the “\$250,000 rule” represented 4% of the total number of RTI applications in 2007 and 2008. The success rate for these applications was slightly lower than the overall success rate for RTI in both years in which data was collected. It should be noted that the largest number of applications under the “250k rule” came from Chemistry with close to a quarter (23%) of the applications. The 45 applications funded have generated \$2.5M in matching funds from other sources in the last two years (mostly from the applicants’ own institution). These same applications have consumed 7% of the overall RTI budgets over the last two years.

Recommendation 3: *Study the reasons for the lower success and funding rates of small universities in RTI-1*

One of the evaluation's findings is that smaller universities have more difficulty in obtaining funding from RTI. This recommendation has to be considered in the broader context of the challenges faced by small universities and NSERC has acknowledged these challenges. The research capacity of small universities is just not the same as that of larger institutions. Many of these institutions specialize in undergraduate training and they do not have access to graduate students. Also, several of the small universities are far from Canada's major centres so there may be few businesses with whom to forge partnerships. No matter how excellent small universities are, they simply cannot provide the full range of research infrastructure that the large universities have. NSERC considers that this recommendation goes beyond the scope of the RTI evaluation.