

Management Response to the Evaluation of PromoScience Funding Opportunity

Context

PromoScience supports hands-on and interactive learning experiences for young Canadians and science teachers that inspire an interest in science and engineering, motivate youth to study science and engineering and ultimately to pursue careers in these fields.

This is the first evaluation of PromoScience covering the time period from the inception of the funding opportunity in 2000 to the end of fiscal year 2014-15. The evaluation was undertaken to assess the relevance, delivery, performance and efficiency of the PromoScience funding opportunity. The evaluation complies with the 2009 Treasury Board *Policy on Evaluation*.

Overall Comments

Management of the PromoScience funding opportunity agrees with the conclusions of this report and the recommendations therein.

Management was pleased that the report confirmed that PromoScience funding contributed significantly to the increased exposure of youth to STEM as well as to the increased interest in STEM. It is also an important finding that the funding leads to improved capacity among the supported science promotion organizations. Management is also pleased that the PromoScience funding opportunity helps build a more positive STEM culture as it is a key component of the *NSERC 2020 Strategic Plan*.

Responses to each recommendation and the management action plan are presented below.

RECOMMENDATIONS

Recommendation 1:

It is recommended that the federal government continue to offer PromoScience through NSERC, as the findings from the evaluation clearly demonstrate a continued need for funding to support informal STEM learning opportunities for all young Canadians. PromoScience is aligned with federal government priorities and NSERC strategic outcomes, and continues to be an appropriate role for the federal government as it helps to support the development of a positive STEM culture in Canada. Evidence collected from the case studies, key informant interviews, file review and various surveys also indicate that PromoScience is achieving its immediate outcomes as funded projects increase the exposure, engagement and interest of young Canadians in STEM and/or increase the training and resources available to improve the capacity of Canadian teachers responsible for STEM education. Additionally, evidence indicates that PromoScience funds enable grantees to improve their organizational capacity to deliver informal STEM learning activities, including reaching out to and/or tailoring project activities for groups traditionally under-represented in STEM. PromoScience's successes in achieving many of its objectives are primarily attributed to the program's funding model and the fact that all funded projects include hands-on and/or interactive activities.

Management Response: *Agree*

Continuing to offer PromoScience is consistent with the *NSERC 2020 Strategic Plan* for 2015-2020. PromoScience is a key component of the Plan under the Fostering a Science and Engineering Culture in Canada focus and is expected to contribute to the creation of a robust culture in Canada that values science and engineering.

There continues to be a significant interest in PromoScience within the science promotion community. The number of submitted applications has increased in recent years as has the amount of funding requested in each competition year. These trends are expected to continue in future years as many organizations within the non-profit community and academia strive to extend the reach, scope and quality of their activities for youth.

Recommendation 2:

It is recommended that PromoScience conduct a strategic discussion to further refine its objectives, expected outcomes and target groups. In particular, the program should consider which outcomes and target groups it can affect to a greater extent. Evidence collected throughout the evaluation suggests that PromoScience makes a greater contribution exposing various groups of youth to STEM and generating an interest in these disciplines, than it does to increasing their STEM skills and knowledge and/or their motivation to pursue further STEM education. There are also indications that teachers play a significant role in developing youth's interest in STEM, and are one of the main factors influencing youth to pursue further STEM education. This influence is noted as being particularly important for youth in secondary school. Another notable theme throughout the evaluation is the importance of providing informal STEM learning activities for youth living in rural and/or remote areas, as this group of youth have fewer opportunities to engage in such activities and may also be further disadvantaged in terms of the STEM learning opportunities they receive through the formal education system.

Management Response: Agree

Management agrees that a strategic discussion is worth undertaking to refine the objectives, expected outcomes and target groups for PromoScience especially in light of the *NSERC 2020 Strategic Plan* which includes the objective of fostering a science and engineering culture in Canada. As part of this discussion which would involve consideration of feedback from appropriate stakeholders, program staff will revisit the existing logic model for PromoScience and adjust accordingly. Given the broad target audience of K-12, the idea of having different objectives and outcomes depending on the age group (i.e. K-8 vs. 9-12) will be explored.

With respect to target groups, the role that teachers play in developing youth interest in STEM as indicated in the evaluation report coupled with the significant multiplier effect of teachers underscores the importance of this target group. Program staff will explore various options to ensure teachers are reached more effectively and in greater numbers.

Providing informal STEM learning activities for youth living in rural and/or remote areas is consistent with the action plan developed for Fostering a Science and Engineering Culture in Canada which is part of the *NSERC 2020 Strategic Plan*. Aboriginal youth, many of whom live in rural and/or remote areas, will continue to be a focus of the PromoScience funding opportunity. In addition to in-person outreach activities, the use of internet-based resources could also have a positive impact on reaching these under-served youth. The 2014 CCA report *Science Culture: Where Canada Stands* states that "New technologies can be used to augment science education and engagement strategies in many ways." Options to increase funding to such target groups and opportunities that make effective use of technology will be explored.

Recommendation 3:

It is recommended that the PromoScience develop a new final activity report (FAR) that includes more close-ended questions regarding the impact of its funding on the implementation, reach and quality of project to provide more useful, accessible and comparable performance information. The report should also continue to include a few open-ended questions to provide grantees with the opportunity to highlight some of the unique attributes of their program. It is further recommended that PromoScience consult with current and former grantees about what performance data is requested in the new FAR to ensure that the data is also useful for grantees and feasible to collect. Additionally, data collected during the evaluation suggests that some grantees do not have the capacity to provide all of the data requested and that the validity of the data is questionable at times.

Several key informants and grantees attribute this lack of capacity to the fact that grantees are unable to use PromoScience funds for project evaluation. Grantees would therefore, likely benefit from more comprehensive and structured information on how to complete the new FAR and the type of data requested, as well as opportunities to use part of their PromoScience grant to collect the data requested by the program.

Management Response: Agree

The final activity report (FAR) was developed in the early stages of the implementation of PromoScience based on input from program staff and the Program Evaluation division. As a result of the analysis of the FARs as part of this evaluation, recommended improvements to the FAR template are not surprising. Program staff will, once again, work with the Program Evaluation division to refine the FAR to ensure the content better suits the needs for any future evaluation work. Grantees may be consulted (i.e. survey) to determine what data would also be useful for them. Some improvements could include providing the template at the time of award of the grant so grantees could start to populate the template as needed. Management agrees that instructions or a Frequently Asked Questions document for the reporting could be useful references when completing the FARs.

Project evaluation is an important component to ensure that the grantee's programming is being delivered effectively. Given the significant cost associated with most project evaluations, NSERC will consult with *Finance and Awards Administration* to investigate if PromoScience funds could be directed to grantee's project evaluation expenses and determine the feasibility of support in light of the available budget for PromoScience. If this is possible, NSERC will consider a limit on the level of funding that could be directed to that aspect of the budget.

Recommendation 4:

Bringing the Informal STEM Learning Community Together is important and it is recommended that PromoScience provide opportunities for current and former grantees to connect with one another, and with the larger informal STEM learning community to share best practices and resources. Such opportunities may include, but are not limited to an online network/community of practice, PromoScience conferences and/or PromoScience staff directly connecting grantees to one another. For instance, PromoScience staff may place two or more grantees in contact with one another if they believe there are opportunities for partnerships and/or that one grantee may help support the capacity development of another grantee. It is believed that providing grantees with the opportunity to connect with one another, and/or with other organizations delivering informal STEM learning activities, will increase the reach, quality and impact of PromoScience-funded projects. It is also recommended that the platform used to bring grantees and the informal STEM learning community together is national in scope in order to support the development of a positive and inclusive STEM culture across Canada. Currently, some national platforms exist that PromoScience may consider partnering with in an effort to avoid repetition and to utilize existing knowledge and/or networks. Such systems included, but are not limited to Actua's annual network member conferences and the Science and Technology Awareness Network (STAN).

Management Response: Agree

Management agrees that more synergy among science promotion organizations is needed as well as increased sharing of best practices. This recommendation is consistent with the action plan for *Fostering a Science and Engineering Culture* in which NSERC plans to develop (or support the development) of an interactive inventory of science promotion organizations as well as a best practices sharing methodology - both of which would provide opportunities for science promotion organizations to share best practices and resources. A national focus for both of these initiatives will be paramount. Potential partnerships will be explored to determine the most effective way to achieve the desired results.

Action Plan

Recommendation	Agree Partially Agree Disagree	Proposed Action	Responsibility	Timeline
<p>1. It is recommended that the federal government continue to offer PromoScience through NSERC, as the findings from the evaluation clearly demonstrate a continued need for funding to support informal STEM learning opportunities for all young Canadians. PromoScience is aligned with federal government priorities and NSERC strategic outcomes, and continues to be an appropriate role for the federal government as it helps to support the development of a positive STEM culture in Canada. Evidence collected from the case studies, key informant interviews, file review and various surveys also indicate that PromoScience is achieving its immediate outcomes as funded projects increase the exposure, engagement and interest of young Canadians in STEM and/or increase the training and resources available to improve the capacity of Canadian teachers responsible for STEM education. Additionally, evidence indicates that PromoScience funds enable grantees to improve their organizational capacity to deliver informal STEM learning activities, including reaching out to and/or tailoring project activities for groups traditionally under-represented in STEM. PromoScience’s successes in achieving many of its objectives are primarily attributed to the program’s funding model and the fact that all funded projects include hands-on and/or interactive activities.</p>	Agree	<p>Continue to deliver the funding opportunity on an annual basis. NSERC is expected to launch the next annual competition in June 2016</p> <p>Continue to promote PromoScience to stakeholders via Call for Applications e-blast</p> <p>Continue to support potential applicants through webinars</p>	<p>Program staff</p> <p>Communications / Program staff</p> <p>Program staff</p>	<p>July 2016</p> <p>September 2016</p> <p>September 2016</p>

Recommendation	Agree Partially Agree Disagree	Proposed Action	Responsibility	Timeline
<p>2. It is recommended that PromoScience conduct a strategic discussion to further refine its objectives, expected outcomes and target groups. In particular, the program should consider which outcomes and target groups it can affect to a greater extent. Evidence collected throughout the evaluation suggests that PromoScience makes a greater contribution exposing various groups of youth to STEM and generating an interest in these disciplines, than it does to increasing their STEM skills and knowledge and/or their motivation to pursue further STEM education. There are also indications that teachers play a significant role in developing youth's interest in STEM, and are one of the main factors influencing youth to pursue further STEM education. This influence is noted as being particularly important for youth in secondary school. Another notable theme throughout the evaluation is the importance of providing informal STEM learning activities for youth living in rural and/or remote areas, as this group of youth have fewer opportunities to engage in such activities and may also be further disadvantaged in terms of the STEM learning opportunities they receive through the formal education system.</p>	Agree	<p>Hold a strategic discussion to refine objectives, outcomes and target groups</p> <p>Modify program literature as required</p>	<p>Program staff / Program Evaluation staff</p> <p>Program staff</p>	<p>September 2016</p> <p>June 2017</p>

Recommendation	Agree Partially Agree Disagree	Proposed Action	Responsibility	Timeline
<p>3. It is recommended that the PromoScience develop a new final activity report (FAR) that includes more close-ended questions regarding the impact of its funding on the implementation, reach and quality of project to provide more useful, accessible and comparable performance information. The report should also continue to include a few open-ended questions to provide grantees with the opportunity to highlight some of the unique attributes of their program. It is further recommended that PromoScience consult with current and former grantees about what performance data is requested in the new FAR to ensure that the data is also useful for grantees and feasible to collect. Additionally, data collected during the evaluation suggests that some grantees do not have the capacity to provide all of the data requested and that the validity of the data is questionable at times. Several key informants and grantees attribute this lack of capacity to the fact that grantees are unable to use PromoScience funds for project evaluation. Grantees would therefore, likely benefit from more comprehensive and structured information on how to complete the new FAR and the type of data requested, as well as opportunities to use part of their PromoScience grant to collect the data requested by the program.</p>	Agree	<p>Hold meeting to discuss improvements to Final Activity Report template</p> <p>Make modification to FARs</p> <p>Consult grantees about FAR data and make additional modifications as required</p> <p>Consider eligibility of project evaluation costs</p>	<p>Program staff/Program Evaluation staff</p> <p>Program staff</p> <p>Program staff</p> <p>Program staff / Finance and Awards Administration Division</p>	<p>September 2016</p> <p>September 2016</p> <p>March 2017</p> <p>September 2016</p>

Recommendation	Agree Partially Agree Disagree	Proposed Action	Responsibility	Timeline
<p>4. Bringing the Informal STEM Learning Community Together is important and it is recommended that PromoScience provide opportunities for current and former grantees to connect with one another, and with the larger informal STEM learning community to share best practices and resources. Such opportunities may include, but are not limited to an online network/community of practice, PromoScience conferences and/or PromoScience staff directly connecting grantees to one another. For instance, PromoScience staff may place two or more grantees in contact with one another if they believe there are opportunities for partnerships and/or that one grantee may help support the capacity development of another grantee. It is believed that providing grantees with the opportunity to connect with one another, and/or with other organizations delivering informal STEM learning activities, will increase the reach, quality and impact of PromoScience-funded projects. It is also recommended that the platform used to bring grantees and the informal STEM learning community together is national in scope in order to support the development of a positive and inclusive STEM culture across Canada. Currently, some national platforms exist that PromoScience may consider partnering with in an effort to avoid repetition and to utilize existing knowledge and/or networks. Such systems included, but are not limited to Actua's annual network member conferences and the Science and Technology Awareness Network (STAN).</p>	Agree	<p>Consultations with stakeholders</p> <p>Inventory of science promotion activities</p> <p>Sharing Best Practices methodology defined and supported</p> <p>Platform for bringing grantees together selected.</p>	<p>Program staff</p> <p>Program staff</p> <p>Program Staff</p> <p>Program staff</p>	<p>September 2016</p> <p>March 2017</p> <p>March 2017</p> <p>March 2017</p>