Feasibility Study and Business Model for a Canadian Science Media Centre

Final Report

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1. EXECUTIVE SUMMARY

PURPOSE

This study examined the operational and financial feasibility of establishing a science media centre (SMC) in Canada. It involved evaluating SMC models in the U.K., Australia and New Zealand and exploring the perspective of Canadian stakeholders who would use and contribute a Canadian equivalent.

RESEARCH FINDINGS AND CONCLUSIONS

The feasibility and success of a science media centre in Canada will be determined primarily by three factors:

- Support for the concept in the science and journalism communities;
- Support from a potentially wide group of funders; and
- Development of a model that provides timely access to credible scientific sources and information.

These conclusions are based on the analysis of the research that included:

- 329 responses to a national on-line survey;
- 31 national and international stakeholder interviews;
- Eight focus groups involving 48 participants;
- A stakeholder workshop with 24 participants; and
- An environmental scan of national and international organizations in the science media-related field.

The research indicated that there is a high level of support for the creation of a science media centre in Canada. Eighty-eight percent of the researchers and 87% of the journalists who responded to the on-line survey, for example, supported the idea.

Journalists indicated that they would use the services of a science media centre if it provides accurate information in a timely manner and offers access to local scientific experts. Scientists expressed a willingness to participate as expert resources because they believe a Canadian SMC will increase the quality of science reporting in this country.

Individuals who expressed interest in potentially contributing funds to an SMC represent a variety of organizations across the stakeholder groups. The research shows that there is a willingness to provide financial support for a Canadian SMC, but a significant amount of focused effort will be required, likely by engaging champions who can raise the necessary funds for start-up purposes and ongoing operations.

The experiences of the U.K. and Australian science media centres provide a foundation of success on which to build, and they are prepared to make their expertise and knowledge available to a Canadian science media centre. Universities, research institutes, and media organizations are interested in supporting such an initiative and other science media-related organizations have expressed an interest in collaboration because it gives them an opportunity to showcase their researchers.

The challenge will be to create a centre that meets the unique linguistic and regional needs of the country and that is feasible within a self-sustaining financial model.

OPERATIONAL MODEL

The focus of the Science Media Centre of Canada (SMCC) will be on supporting general assignment reporters covering science-related stories. Researchers will also participate in the SMCC as experts and they may avail themselves of programs, such as media training, offered by the Centre. Others may also benefit from materials prepared by the SMCC including public information/relations officers; business professionals; policy-makers; students; and teachers.

The SMCC must offer reporters:

- Timely response to phone and e-mail inquiries;
- Background information about breaking news and access to relevant experts;
- Advance notice of journal articles and other story-related opportunities;
- Insight into using statistics, scientific terminology, definitions, and concepts;
- A list of reliable and credible websites; and
- A comprehensive list of science conferences in Canada.

Journalists have indicated that access to images, videos and graphics would be a desirable service and it would differentiate the SMCC from its counterparts in other countries.

The SMCC must offer researchers:

- Media training (on-line and/or in person) to prepare scientists for interviews; and
- An on-line media guide that provides advice on how to effectively communicate with a reporter in a short news interview.

Other services might include informal brainstorming sessions and roundtable discussions that bring together journalists and researchers to explore effective ways of communicating complex scientific information to the public.

To be successful, the SMCC will need to offer services to journalists and scientists in both official languages. This could be accomplished by creating a centre that is fully bilingual or developing a partnership/collaborative agreement with an existing organization.

Other operational considerations include the location of the SMCC; human resource requirements; business and governance models; and funding and performance measures.

- While there are compelling arguments for establishing the SMCC in any number of locations, on-line communication makes the physical location less important than the depth and integrity of the services the SMCC offers.
- A wide range of competencies are required to start up the SMCC and expand its service offerings over time. Similar to the U.K. and Australian SMCs, it is expected that the SMCC will eventually require the equivalent of five or six full-time employees, depending on the services offered. Some of these resources could be seconded from partner organizations or their salaries underwritten in some other way.
- A not-for-profit model is the most appropriate business model. This is based on two assumptions: that the SMCC is independent and that no one individual or organization will profit financially from it.
- The governance model needs to include regional, bilingual and private/public representation on the board as well as a research advisory panel.
- Start-up funding for the Australian science media centre was provided by government to allow for a development year and the first year or two of operations. The U.K. SMC received seed funding from a single private donor. Other options to be explored include funding from a foundation, donations from individuals, and/or a contribution from a champion whose organization might set up an endowment.
- The optimal funding model for the SMCC on a go-forward basis is a membership model with the following features: representation from a variety of sectors; a cap on the number of funders from any one sector; representation from across the country; and representation from both Francophone and English organizations.

- Tracking and reporting mechanisms must measure progress against the mandate and defined objectives. The performance measurement methodology should measure not just outcomes over a period of time but suggest corrective actions to promote the ongoing sustainability of the organization.

NEXT STEPS

This study demonstrates that there is strong support for a science media centre in Canada and that such a centre is feasible. With the appropriate service offerings, it will be used by journalists and scientists, and with the engagement of committed champions, funding should be achievable both for start-up purposes and on an ongoing basis.

The next step is to develop a comprehensive, five-year business plan that establishes the strategic priorities for the SMCC, expands on the operational and governance considerations described in this study, describes the revenue streams and costs in detail, and provides an implementation timetable. This plan should also be used to help recruit a CEO, champions, funders, board members, and research advisory panel members.

2. INTRODUCTION AND PURPOSE

Canadians have a voracious appetite for scientific information – and they have a preferred means of receiving that information. According to recent research conducted by Angus Reid Strategies, Canadians are eager for more coverage of science and health issues. It also found that Canadians yearn for more scientific background information in media accounts to support reporting, rendering them more accurate and balanced. The poll indicated that while medi are effective in presenting information in an accessible manner, scientists are a trusted source of credible and accurate information.

The survey indicated that Canadians are eager for more coverage of science and health issues – areas deemed to be in the shadows compared to issues such as politics, sports and business. It also found that Canadians yearn for more scientific background information in media accounts to support reporting, rendering them more accurate and balanced. While media are effective in presenting information in an accessible manner, scientists are a trusted source of credible and accurate information the poll indicated.

Bridging these two worlds is no easy feat. Three jurisdictions – Britain, Australia and New Zealand – have established science media centres to provide journalists with what they need in the form and time-frame they need it when science is in the news whether this be accurate information, a scientist to interview or a briefing session.

But the potential for a science media centre (SMC) goes beyond facilitating process and encouraging accuracy and insight. It fosters understanding and collaboration among scientists and the media; it increases the breadth and depth of reporting on scientific issues; and it promotes knowledge synthesis, translation and exchange. The importance of understanding science in the 21st century is critical. Indeed, it is essential in a modern democracy.

"There is an untapped opportunity for the media and science research communities to work together to convey credible, accurate, and easy-to-understand information about research that will benefit the public." Deborah Gordon-El-Bihbety, President and CEO, Research Canada

We know that the science media in Canada is small but vital. In Canada, as elsewhere, there are fewer and fewer science reporters engaged in the day-to-day reporting of science at a time when science is playing an even more critical role in many stories from the use of renewable resources to the obesity epidemic to genetically engineered food. Coverage of science remains inadequate.

It is well worth investigating how to move that situation from inadequate to adequate to excellent.

The overall purpose of this project was to examine the concept of an SMC by evaluating the U.K., Australian and New Zealand models and developing an understanding of the perspective of Canadian stakeholders to assess the feasibility of such a centre in the Canadian context.

Included in the scope of this project are the following:

- An examination of the three current models;
- An assessment of the feasibility of a Canadian SMC; and
- Development of a number of design options for consideration by the SMC Project Steering Committee.

3. METHODOLOGY

The methodology employed in this project involved four main work steps, each of which are described in detail in the following pages:

- Stakeholder consultation;
- Environmental scan;
- Feasibility analysis and options; and
- Reporting.

STAKEHOLDER CONSULTATION

The anticipated business plan for a Canadian science media centre will ultimately be implemented within a complex mix of multiple stakeholder relationships. Consulting as wide a range of stakeholders as practicable allowed the consulting team to assess support from key players and provide a tangible platform for effective decision-making.

Working closely with the project steering committee, the consulting team developed a list of stakeholders to be consulted and identified the consultation approach to be used. In order to contact as many stakeholders as possible, a four-pronged approach was used:

- An on-line survey was sent to a variety of stakeholders across the country;
- Individual one-on-one consultations were held with key informants in Canada, the U.K., Australia, New Zealand, and the United States;
- Focus groups were carried out across the country; and
- A stakeholder workshop was held following conclusion of the research to discuss SMC operational issues.

The consulting team compiled preliminary findings from the complete range of stakeholder consultations, which were reviewed then with the project Steering Committee before moving forward with options development. Stakeholders participating in a workshop provided input to the operational model.

Following is a discussion of the information received from the stakeholder consultation process.

Stakeholder Survey

An on-line survey was developed in both English and French and distributed to over 3,000 individual e-mail addresses. Contact information for the survey distribution was provided by the Project Steering Committee and the Halifax Global Inc. (HGI) consulting team. Where recipients were administrators of research or administrators of a stakeholder group (e.g., Canadian Writers' Federation), a request was included in the e-mail invitation to distribute the survey invitation to members and researchers who were the ultimate target audience.

The survey was launched on August 21st and was active until September 26th. During this time frame, reminder invitations were sent to all recipients and invitations were directed to specific individuals to increase the geographic and/or respondent type breadth of responses. As this survey was intended to provide qualitative information, this type of targeted invitation was felt to be appropriate and effective.

Survey responses were collected from 329 individuals who represented all stakeholder groups identified by the Project Steering Committee. The following table depicts the breakdown of respondents by type.

Table 1 Survey respondents by type

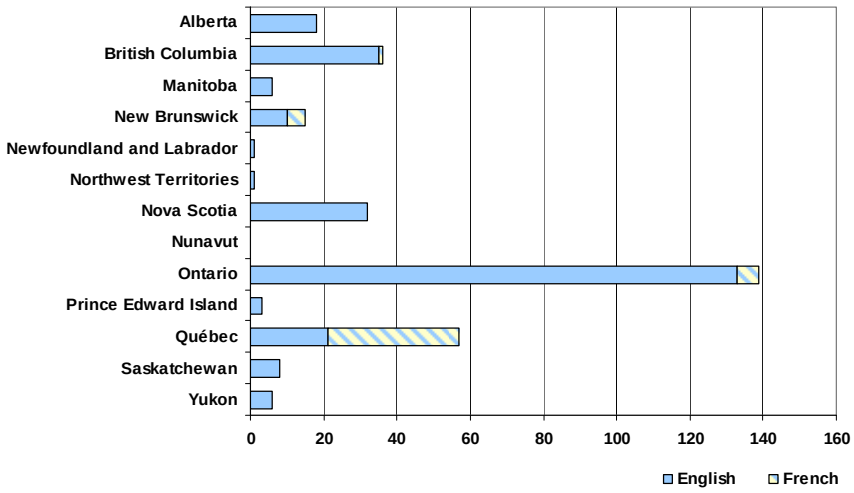
	English	French	Total
Publisher	2	4	**6**
Funder/ Investor	11	0	**11**
Editor/ Producer	15	2	**17**
Director/ Vice-president/ Administrator of research	56	11	**67**
Journalist/ Writer/ Freelancer	49	19	**68**
Public relations professional/ Press officer	67	9	**76**
Researcher	74	7	**81**
answered question	**274**	**52**	**326**
skipped question	**2**	**1**	**3**

Twenty-five per cent of respondents were researchers, followed closely by press officers, journalists and research directors. Smaller numbers of responses were collected from editors, funders and publishers. The limited responses in these last three categories make it difficult to draw any firm conclusions about how this group feels in regard to the SMC concept; however, general perceptions will be reported.

Of the 276 English surveys that were started, 208 included answers to all questions. In the French version, 53 were started and 36 included answers to all questions. In order to use as much information as possible in the analysis, all responses to all questions have been considered.

Respondents to the survey were located in all provinces and territories, with the exception of Nunavut. As would be expected, the majority of respondents to the French version of the survey were from Québec, however, respondents from Ontario, New Brunswick and British Columbia also completed the French survey.

Chart 1 Survey respondents by province of residence



Representation was not evenly distributed across the provinces. Nor was there representation from all respondent types from each province. Most respondents were from:

- Ontario (43%),
- Québec (17%),
- British Columbia (11%), and
- Nova Scotia (10%).

The following table presents the breakdown of survey respondents by type and province of residence.

Table 2 Survey respondents by province of residence and type

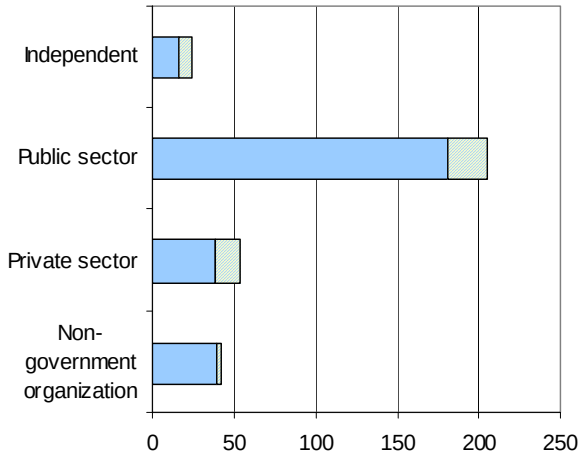
	Director	Editor	Funder	Journalist	Press Officer	Publisher	Researcher	Total
Alberta	4	3	1	4	1	0	5	18
British Columbia	4	0	0	9	9	0	14	36
Manitoba	1	0	0	0	5	0	0	6
New Brunswick	3	2	1	6	3	0	0	15
Newfoundland and Labrador	0	0	0	1	0	0	0	1
Northwest Territories	0	0	0	1	0	0	0	1
Nova Scotia	9	0	0	0	5	1	17	32
Nunavut	0	0	0	0	0	0	0	0
Ontario	27	8	7	24	35	1	37	139
Prince Edward Island	1	0	0	1	1	0	0	3
Québec	14	2	1	17	13	4	6	57
Saskatchewan	1	2	1	1	2	0	1	8
YU.K.on	0	0	0	4	2	0	0	6
Total	64	17	11	68	76	6	80	322

Note: 7 respondents did not indicate their province of residence

Respondents also represented all organization types, as depicted in the following chart. The majority of respondents, 63%, were employed by public sector organizations.

- 16% are with private sector organizations;
- 13% are from NGOs; and
- 8% are independent.

Chart 2 Survey respondents by organization type



Following is a brief description of each respondent group. Complete descriptions of the respondents can be found in Appendix D.

A. Journalist

Of the 68 journalists/writers who responded in part or in whole to the survey, 21 have been writing for more than 15 years, and 15 have been writing science-related stories for more than 10 years. Newspapers were identified as the most common type of publication written for; however, 30 respondents also indicated they write for on-line publications, and 28 write for magazines. National publications were the most frequently identified market, followed by local and provincial. Only 12 of the respondents write for international publications.

Many of the writers who responded spend less than 10% of their time writing about any one scientific area, which would indicate that they would be considered to be generalists. However, there were a number who indicated that they spend more than 50 per cent of their time writing about one or more of the scientific areas presented. This was particularly the case with the natural sciences and engineering (including environmental sciences).

B. Researchers

Eighty-one researchers participated in the survey, representing 40 per cent of those who have 10 or fewer years of research experience. Post-secondary educational institutions were the primary employer for 47 of the researchers. Close to 50 per cent of the respondents were working in the area of health sciences and just over 33 per cent focus on natural sciences and engineering. Only three of the researchers received media enquiries on a weekly basis, the majority responded to inquiries annually or rarely/never.

C. Research Directors, Vice-Presidents of Research, and Research Administrators

As was the case with the researchers, the majority of the 67 research directors who responded were employed at universities or other post-secondary educational institutions. The research funds under management vary across a broad range, but 23 of the research directors manage over $25 million in research funding annually. All four of the research sectors were represented equally by the research directors who participated. Contrary to the perspective of the press officers (described below), 40 per cent of the research directors indicate that their organization responded to media inquiries on a daily basis; a further 31 per cent say they responded to inquiries on a weekly basis.

D. Editors / Producers

Of the 18 editors/producers who responded, nine have been professional editors for more than 15 years. As well, seven of the editors indicate that they have been editing/producing science-related material for more than 15 years. On-line publications, newspapers and

magazines were the most common publication types, with a few respondents from radio and television. Only two editors indicated that their writers spend more than 50 per cent of their time on any one scientific area; the majority are split between 10 and 20 per cent. The editors who responded represent mostly local, provincial and national publications.

E. PUBLISHERS

The response rate of publishers was very low, with only six publishers participating. These publishers represented magazine, newspaper and on-line publications; no publishers from radio or television responded. The publishers also represented a range of organizational sizes from one to five reporters up to 51 or more.

F. PRESS OFFICERS / PUBLIC RELATIONS OFFICERS

Similar to the breakdown of researchers and research directors, the majority of the 76 press officers who responded were employed at universities or other educational institutions. Only four of the press officers issued more than 100 science-related news releases annually; the majority release fewer than 30, with 36 respondents indicating that they released between 0 and 25. Correspondingly, 61 per cent of the press officers indicated that they responded to between 0 and 5 media inquiries per week.

G. FUNDERS

Eleven funders responded to the survey representing a variety of funding organizational types; no representatives from the venture capital area responded. Together, the funders who did respond provided funding for all four of the research sectors. The majority of the funders felt it was very important that projects they fund received media coverage.

Focus Groups

The first focus group meeting was held in Calgary as a pilot to test the questions and explore the concept initially. Following the project launch, seven focus groups were held in:

- Halifax
- Montréal
- Ottawa (two focus groups)
- Toronto
- Vancouver
- Winnipeg

In total, 48 individuals participated in the focus group sessions. Participants represented both mainstream and science media. One of the two focus groups in Ottawa discussed the issues of funding and included representatives from government and funding agencies.

The focus groups were facilitated by a variety of individuals well versed in the objectives of the project and the SMC concept. A list of focus group participants is found in Appendix A.

Individual Interviews

One-on-one interviews were conducted with 30 individuals representing the following types of organizations:

- Media-related organizations
- Universities and research institutes
- SMCs in other jurisdictions
- Media who use SMCs in other jurisdictions
- Government
- Private sector companies
- Foundations
- Funding agencies

The interviews were conducted by members of the consulting team either in person or via telephone. Where necessary, follow-up e-mails were sent to clarify points and delve further into specific issues.

A list of individuals interviewed is found in Appendix B.

Stakeholder Workshop

A stakeholder workshop was held in Toronto to seek input to the operating model for a science media centre in Canada. Most of the 24 participants had prior knowledge of the SMC concept. The consulting team sought input to the following areas:

- Linguistics and geography;
- Governance and funding;
- Delivery of services; and
- Engagement/recruitment of experts.

Feedback from this session has been incorporated into this report. A list of participants can be found in Appendix C.

Environmental Scan

The environmental scan consisted of two main elements:

- Review of U.K., Australian and New Zealand SMCs
- Review of alternative national and international science media services

Research was conducted through one-on-one interviews and internet-based research. In total, the structure and operations of nine different organizations were analyzed. Each provided a different approach, structure, funding model, and operational profile. The results of the research were then compiled into comparison matrices to allow for easy review and analysis.

Feasibility Analysis and Options Development

Using the results of the stakeholder consultation and environmental scan, the consulting team analyzed the feasibility of creating a science media centre in Canada. This analysis was followed up by a day-long working session in which the consulting team identified the options for operating, structuring and funding a Canadian SMC. These options were then explored in more depth to establish the best possible option that would lead to the successful launch of a science media centre of Canada.

Reporting

Preliminary reporting consisted of initial consultation findings from the one-on-one interviews and focus groups. A second preliminary report presented the results of the on-line survey.

Final reporting consists of this report, which includes a discussion of the elements of an operational model needed to fund and launch a science media centre in Canada.

4. CONSULTATION FINDINGS

The vast majority of stakeholders feel that a science media centre for Canada would be beneficial and would resolve a number of issues.

Researchers and research directors who responded to the survey generally agree that the quality of reporting of science stories in the Canadian media is "somewhat good". While this is a subjective response, it is a good benchmark against which quality can be measured to gauge the impact of a Canadian SMC, should it be created.

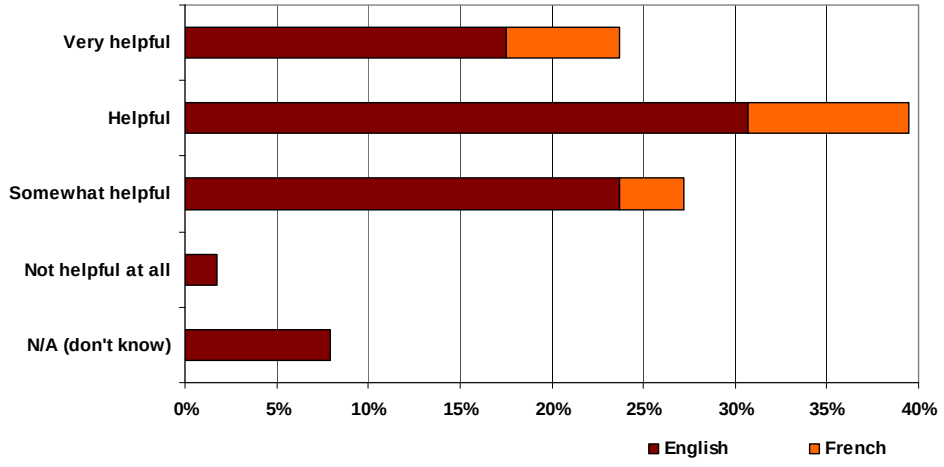
SUPPORT FOR A SCIENCE MEDIA CENTRE

The creation of an SMC was seen as a good way to help journalists and press officers do their work. The majority of journalists, press officers and PR professionals, and editors/producers who responded to the survey felt that an SMC would help journalists do their work by providing access to:

- More and varied contacts;
- Credible background information; and
- New sources of information.

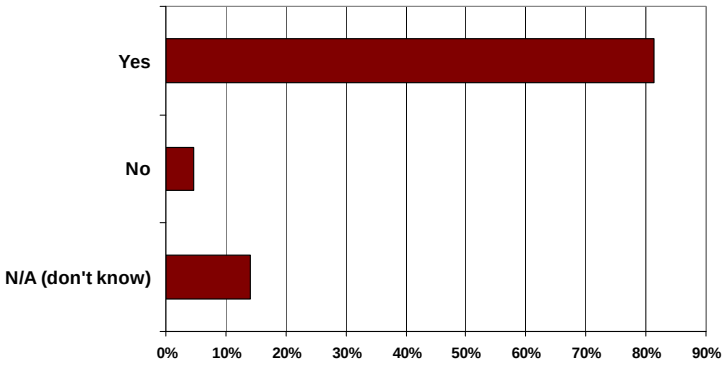
As shown in the following chart, the majority of these same respondents felt that an SMC would help the quality of reporting of science.

Chart 3 The degree to which an SMC would help journalists report on science



When asked in the survey, five of six publishers also felt that an SMC provide an opportunity to improve the quality of science journalism in Canada. There was general support for the creation of an SMC, with 81% of respondents saying they felt the creation of an SMC would be useful in this country.

Chart 4 Would the creation of a Science media centre be useful?



The majority of each respondent type indicated that they support the idea of creating a science media centre in Canada.

Table 3 Would the creation of a Science Media Centre be useful, by respondent type

	Yes	No	Don't know
Researcher	88%	3%	9%
Journalist/ writer/ freelancer	87%	2%	11%
Publisher	100%	0%	0%
Funder/investor	70%	10%	20%
Director/ vice-president/ administrator of research	74%	4%	21%
Public relations professional/ Press officer	76%	6%	18%
Editor/ producer	76%	12%	12%

Reasons for Creating a Science Media Centre

The reasons for establishing an SMC in Canada vary; however, there were consistent themes that emerged, and they are supported across all stakeholder types:

a. Fewer dedicated science writers

In many media outlets the "science beat" is disappearing, so science and science-related stories are being assigned to generalists. These journalists are often pressed for time and having a one-stop-shop for science information, sources and connections is seen as being helpful. Generalists often do not have a science background, so providing them with more information and guidance will lead to better science reporting.

b. Science impacts many stories

More and more issues have a scientific element including lifestyle, health, and business. Helping journalists understand the science, communicating in lay language, and providing training would all be useful services. An SMC would help journalists in a wide variety of different beats.

c. Information gathering

An SMC would provide value to reporters by providing quick and easy access to experts who are well versed in dealing with the media and explaining science in a meaningful way. It could also help link journalists with background, visuals and new sources that they are not already aware of. The journalist would have access to the right person to respond to the science topic, not just the first one they reach. The end result will be a variety of sources quoted and references, thereby, providing more insight into the scientific process.

d. Science promotion

The promotion of science, and particularly Canadian science, is also seen as an outcome of an SMC. With more and better reporting of science in the media, the general public will be more aware of scientific methods and processes. Collaboration with SMCs in the U.K., Australia, and New Zealand will also serve to increase the coverage of international science stories in Canada. Ultimately the public will become better educated about science and research in general.

e. Fact-based reporting

Science, as reported in the media, must be fact-based and presented with a balanced view; it is seen that an SMC will enable this to happen. Science must be reported in context of the illness, condition or theory that is being explored. Putting the science in context and adding depth will help with understanding.

Fact-based reporting will also help dampen some of the sensationalism in the media around scientific issues. Creating a higher standard for the reporting of scientific information will help create balance and put issues in perspective.

f. Bridging gaps

At present, there is a disconnect between the research and media communities. An SMC may be able to bridge this gap and help engage the public with the outcomes of science. This needs to be achieved if Canada is going to play a role on the global science stage.

SMC Services that Would be Useful

A variety of services were identified as being useful to journalists and researchers.

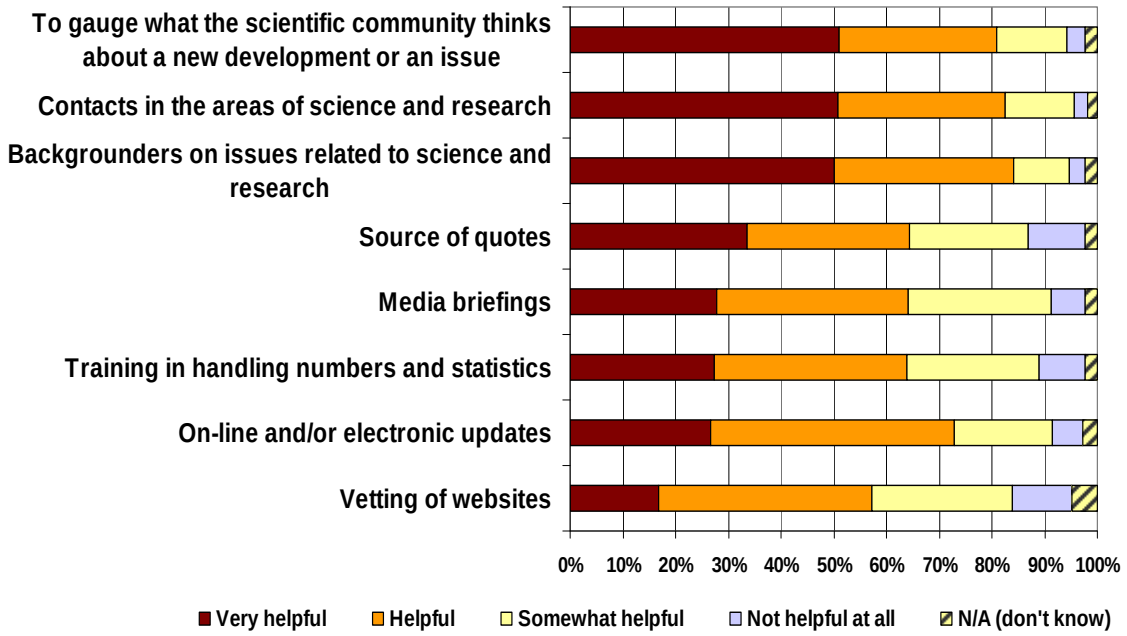
The top services for journalists that were identified in the individual interviews and focus groups were:

- Background information
  - Fact sheets
  - Video conferencing with experts
  - Media briefings – in-person and web-cast
  - Video and graphics
  - Global perspective
  - Electronic journal access
- Contacts
  - On a regional/local as well as national basis
  - Bilingual
  - Able to speak lay language
  - Able to respond by deadline
  - Quotes from experts

- Understanding of the science
  - Fact checks
  - Toolkits
  - Background on methodologies used
  - Code of ethics in research
  - Significance of the study
  - Limits of the results
  - New and big science (unknown to journalists)
- Training
  - Help with interpretation of quantitative information
  - Media training for researchers
- Information sharing
  - Calendars of conferences and science events across Canada
  - Alerts drawing attention to major publications and awards by Canadian scientists
  - Language translation services
  - Services for researchers

The results from the survey were very similar as depicted in the following chart.

Chart 5 Helpfulness of proposed SMC services



The journalists and press officers had strong views, particularly in terms of the value of an SMC as a source of quotes or for the vetting of websites. The provision of a list of quotes without context or direct contact between the researcher and the journalist was seen by some as providing little value to the journalistic process.

Services for researchers were also seen as having value by 80 per cent of researchers and research directors who responded to the survey as well as interviewed stakeholders. Many researchers are not seen to have good media skills, so providing media training or media guidelines for researchers is seen as having value.

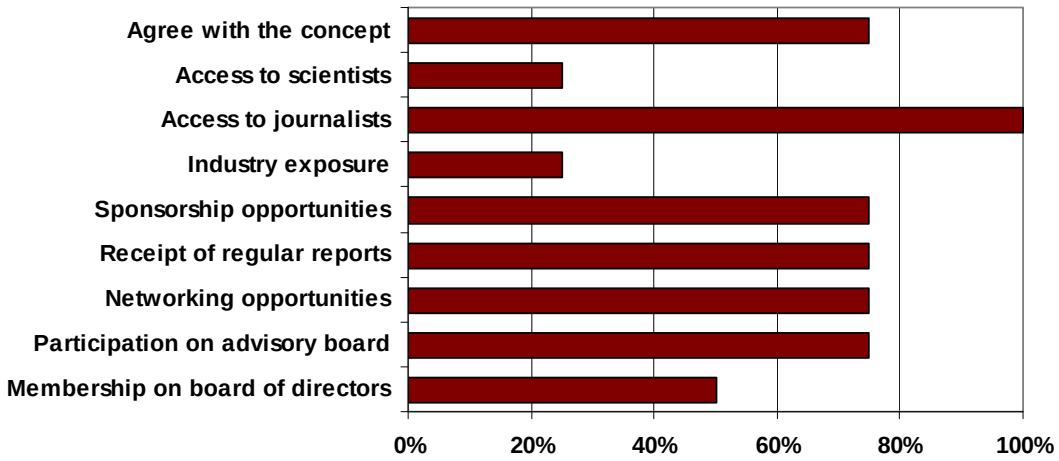
Overall, most stakeholders agree that the services identified have some value to both journalists and researchers. The actual structure and implementation of a service is what will ultimately determine its usefulness. Structural issues and considerations are discussed in the pages that follow.

FUNDING FOR AN SMC

There was some interest expressed by stakeholders in providing financial support for an SMC; however, there was less support expressed from potential funders and publishers who responded to the survey, where only 4 of 18 respondents indicated they would consider providing funding. There was also limited interest in providing in-kind support; the support that was offered was mainly in the form of space, staff and communications.

Many stakeholders felt that in order to secure the type and amount of funding required to establish an SMC that a champion will have to be recruited. The motivation for some to provide support would come from the list of organizations/individuals already providing support. The stakeholders who responded to the survey identified the following as factors that would motivate them to support an SMC:

Chart 6 What would motivate funders to provide financial support to an SMC



The maximum level of funding most acceptable to the stakeholders consulted individually ranged from $10,000 to $25,000 a year. Amounts up to those levels are considered to be discretionary and easily accessible by most that were consulted.

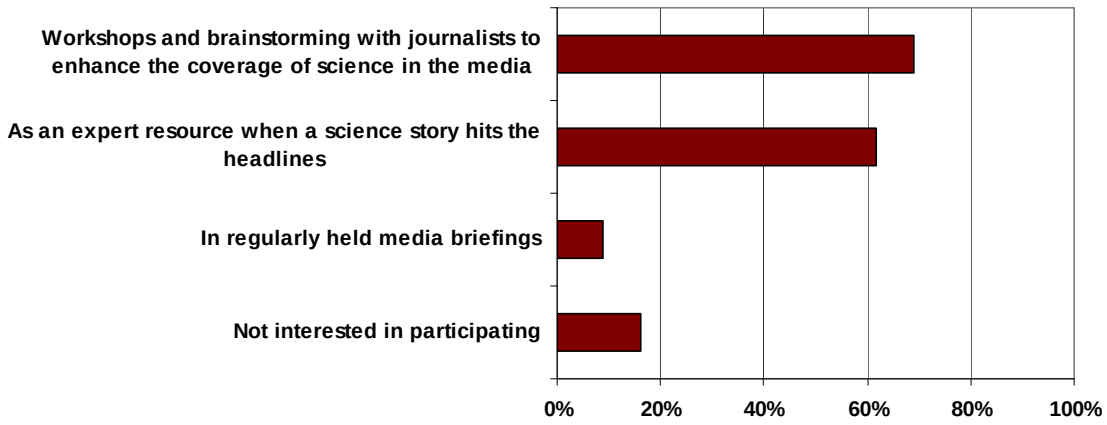
It will be important to limit the amount of funding provided by any one industry or sector and to make a clear distinction between the funding, governance and operations. The concern that the SMC becomes an advocate for large companies or the government, based on their financial support, was clearly articulated.

USERS OF AN SMC

Targeting the services of an SMC towards generalists appeared to have the most support from stakeholders. Secondary users would include science journalists, political journalists, professionals (consultants, lawyers), students, and teachers. There is some concern around the capacity of an SMC to handle inquiries from all of these potential user types; keeping the focus on journalists is seen as critical.

Most of the researchers who responded to the survey question on this issue would be supportive of an SMC and would be willing to participate as shown by the following chart.

Chart 7 Ways in which researchers would participate in an SMC



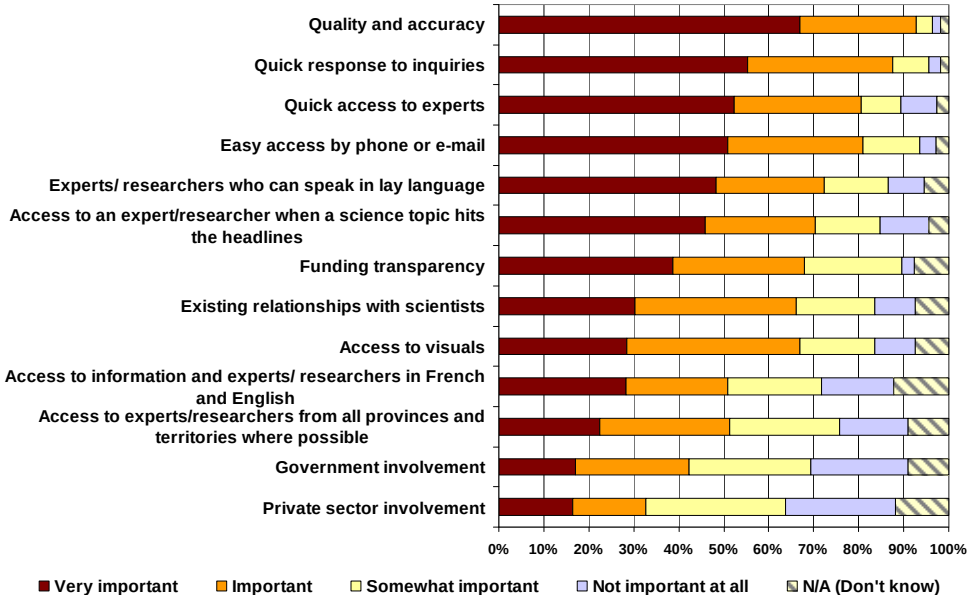
Researchers also suggested some additional ways in which they could support an SMC including:

- Training in interpreting health-care quality, health-care delivery and new treatments; and
- Monitoring and evaluating the coverage of scientific developments in the media.

SMC Structure and Operations

Quality and accuracy, speed, easy access, and experts who can speak in lay language are the most important factors that survey respondents indicated would affect their use of an SMC.

Chart 8 Factors impacting a journalist's use of an SMC



The way the SMC is structured and operated will have a large impact on its use by journalists and others in the science-writing community. The following factors were discussed by participants in the interviews, focus groups and survey.

a. Credibility of researchers

Ensuring the researchers in the database are high quality, but not necessarily the top people in that field, is essential. Criteria should be developed to be used in selecting researchers for inclusion. Factors that could be considered include standing in the science community, publishing record, ability to communicate in lay language, and lobbying affiliations.

b. Neutrality

The SMC must operate at arm's length from any organization that can be seen to benefit from the science in the news. This would include funders. It also must not favour one university or institution over another or one industry sector over another. Journalists should be given access to all resources and they can make the decision of whom to contact. Keeping the provision of information objective will help generalists report more accurately and comprehensively.

c. Responsiveness

It is important to recognize that print, radio and TV (and in some cases on-line) media all have different deadlines. The ability to provide access to information and sources 24/7 would alleviate some of this pressure. It would also be helpful if response to inquiries were provided based on deadline as opposed to the order in which they were received or prominence of the inquirer.

d. Access to local experts

It was emphasized that providing access to local/regional experts in a timely manner is critical. Audiences across the country prefer to see local experts responding to stories rather than experts from other parts of the country or other countries.

When providing sources for a science story, journalists want to know who locally is available to comment on the breaking news; who are the local experts who can talk about the science; and where can they be reached. Journalists indicated that access to multiple local contacts would be beneficial, and where appropriate, scientists with alternative views should be provided.

The SMC database would have to include experts from all provinces and territories. By doing this, it may be able to draw attention to research being conducted in remote areas such as the north. As well, alerting media to recently released research from local researchers would increase the pick-up in local media.

It was suggested that the size of the country may dictate that more than one physical location may be required. However, having virtual offices in a variety of locations linked to one, central physical location may be a good way to get national coverage. Co-locating with another science-related centre may provide this type of national access and increase the centre's standing in the science community.

e. Background role

The best role for the SMC is seen as a provider of information working in the background, not wanting its name in the press. It should not take publicity away from the researchers or the institutions/funders that support them. The role of facilitator would reduce the risk of competition between the SMC and other institutions.

Most universities and research institutes have public relations departments that maintain lists of experts, produce news releases, and organize briefings. By working in partnership with these offices, the SMC would provide additional access to researchers and ultimately increase the news coverage for the institution.

f. Repository of information

Creating a repository of scientific information and resources would provide journalists with a good source of quality information. Ultimately, journalists want will use graphics and videos for which there is no charge and where they do not need to obtain permissions.

g. Proactive approach

The SMC should be proactive in presenting stories to journalists. Some suggestions include anticipating the 10 top science stories to look for in 2010 and upcoming science conferences. The SMC could also distribute breaking news alerts of science discoveries at local/regional universities; although this may be a duplication of service provided by other organizations.

h. Language

The services of the SMC will have to be provided in both English and French in order to support journalists across the country. Some funders indicated that the centre would have to be bilingual if it was to receive their financial support.

i. Efficiency and quality

The speed of response and accuracy of information are seen as primary elements in creating a high-quality information service for journalists. If the SMC provides high-quality contacts, accurate background, and quality graphics, and does that quickly, then it would be well received. One stakeholder suggested the centre should be governed by a code of ethics.

One way to achieve efficient and quick access would be to provide on-line access to the information and resources. By eliminating the need to actually phone or e-mail the SMC to get the information, there would be time saved by everyone.

j. Perspectives

The SMC will provide real value if it is able to present multiple angles of the same story where this is appropriate. Providing contacts that can take different sides in a scientific debate will stimulate understanding and make for more interesting journalism. However, this approach may be difficult to achieve as there are often problems for organizations that try to be all things to everyone.

k. Cost

Having a service that is free of charge to journalists is seen as one way to encourage use of the SMC.

COLLABORATION

Collaboration is seen as one way the SMC can further improve on the reporting of science in the media. By working closely with programs already in operation at other organizations that support researchers and journalists throughout Canada, including universities and institutes, the SMC would be able to improve journalists' access to the best sources and information.

The existing SMCs in the U.K., and Australia would also be interested in collaborating with a Canadian SMC, as would the American Association for the Advancement of Science. All of these organizations see this collaboration as two-way. These organizations could help the Canadian SMC get set up by sharing their knowledge and experience as well as providing access to researchers in the U.K., Australia and the United States. In return, the Canadian SMC would be able to provide these partner organizations with access to Canadian researchers and journalists via its database and distribution networks.

Collaboration was also seen as a way to eliminate duplication of effort as many smaller, industry-focused organizations are looking at establishing this type of service but just for their industry.

CONCERNS

A variety of concerns were raised by stakeholders covering a range of topics and impediments to success. The three most frequently identified concerns – perception of bias, competition and redundancy – are closely linked.

a. Perception of bias

There needs to be a clear division between funding (and funders) and the operations of the SMC to avoid any perception of bias. The SMC cannot be allowed to become an advocate for government, industry or any one company.

The question was raised whether there will be conflicts of interest between researchers and the federal government's objectives around research; for example, would the current federal administration support an organization speaking in favour of stem cell research or some other topic that is politically charged? Serving the political interests of government could mean the SMC loses credibility with both journalists and researchers.

Several stakeholders suggested that there should be a limit on how much any one company, industry sector or government should be able to contribute. Also, ensuring funding transparency will help avoid a perception of bias. Another way to avoid perception of bias would be to include journalists on the board of directors.

b. Competition

There are several types of competition that are of concern to stakeholders:

- Competition between the SMC and other organizations that already provide a similar type of service. There is some concern about possible backlash from university PR departments and charitable organizations that rely on publicity to get their message out.
- Competition between media outlets when everyone has access to the same information – a loss of competitive edge.
- Embargoed material may not be respected, meaning that stories would run earlier than anticipated and potentially undercut certain media outlets.
- Relationships between some publications and their traditional newswire and other sources, like Canadian Press, could be negatively affected.
- It could be difficult for the SMC to establish itself as distinct from advocates and institutions.

c. Redundancy

Many stakeholders feel that the establishment of the SMC would be redundant in the present environment. CIHR was specifically mentioned as being proactive in bringing scientists and the media together. If the services of the SMC were complementary to those offered by other organizations, then much of this concern would be eliminated. There was some concern that the SMC would only serve science funded by CFI and that it may not be representative of the diverse interests and expertise across the country.

Additionally, the following concerns were raised by selective respondents:

a. Inclusiveness

In order for the SMC to be of use to some stakeholders, it would have to include all universities and colleges in the country. It should not be exclusive.

b. Volume/capacity

Ensuring there is sufficient funding and, capacity to deal with the volume of science stories will be critical.

c. Accuracy and credibility of media

The SMC should work closely with the media and research institutions to ensure information presented is accurate and credible and does not misrepresent the realities of the science. The announcement of new discoveries is often premature and the possible impacts are often exaggerated. The stories resulting from these announcements can create disjuncture between public experience and media views of science, undermine the scientific enterprise, and ultimately reduce public confidence in research spending of taxpayer dollars.

d. Scientific consensus

On many issues that the public is concerned about, the scientific community is as deeply divided as the general population.

e. Users

Some stakeholders were not convinced there are enough journalists needing this type of service to make it viable.

5. ENVIRONMENTAL SCAN FINDINGS

SCIENCE MEDIA CENTRES

Science media centres have been established in the United Kingdom, Australia and New Zealand in response to concerns that science-related issues are not being reported as comprehensively or accurately as necessary for an informed public and informed public policy. Each of these centres has a unique operational and funding model. Following is an overview of the key features of each centre.

United Kingdom

The U.K. Science Media Centre grew out of issues arising from the press sensationalizing science issues (specifically the genetically modified food). Also, when science was in the news, the stories were assigned to generalists who had to respond quickly with little background knowledge. The U.K. SMC was established to help these generalist media – not science journalists – with the goal of improving the quality of science coverage in the British media and informing public policy.

START-UP

- Spent a lot of time meeting with editors, controllers, government to determine what exactly was needed.
- Became clear they had to build the database of contacts – a lot of persuasion required to recruit scientists to agree to be listed.
- Started out with a staff of three: Director handles the journalists; another staff member handles the researchers; third person as office manager. Doubled staff in first six years.
- Consulted with stakeholders – 75% of key stakeholders wanted them to focus on controversial issues. They do not try to please everyone at the same time. They do not cover humanities or social sciences.
- Baroness Susan Greenfield was very active at start-up as a champion to raise funding. The role of champion is important but needs to be divorced from the organization particularly if the champion is outspoken, high-profiled or associated with particular issues.
- Spent the first weeks of operation waiting for calls – called all the news desks to tell them what the SMC does. Eventually, when science hit the headlines, they contacted

the publication and spoke with the person handling the story. Then got the journalist what they needed – information, contact with an expert, etc.

OPERATIONS

- An independent venture working to promote the voices, stories and views of the scientific community to the national news media when science is in the headlines.
- First and foremost a press office for science when science hits the headlines. They provide journalists with what they need in the form and time-frame they need it when science is in the news— whether this be accurate information, a scientist to interview or a feature article.
- They adapt the best science and make it easier for journalists to access this science.
- They deal with science from the media perspective only – media driven. They react to the media agenda.
- They have built a database of over 1200 contacts on the areas of science most likely to be featured in the news. This allows the SMC to be proactive and puts it in a position to facilitate more scientists to engage with the media when their subjects hit the headlines.
- They work with over 500 U.K. press officers.
- They also run a series of longer-term activities to improve the interaction between science and media such as advice guides for scientists talking to the media, background briefings for journalists, and *'Science in a Nutshell'* summaries for news desks.
- The SMC in the U.K. is physically located in the Royal Institution but independent from any single scientific body.
- The U.K. SMC collaborates with the Australian SMC by linking Australian researchers with U.K. journalists, and linking U.K. researchers with Australian journalists.
- The U.K. SMC also helped set up the Aus SMC by sending a media officer to Australia to help set up their database.
- There is a staff of six at the U.K. SMC, including a director, press officers (3), one science information officer, and a centre co-ordinator.
- Select researchers based on experience: peer reviewed, expertise, good track record, and good quality.
- There are some top scientists who do not want to be in the database – they refuse to talk about a story on the day that it breaks.
- The service is for news reporters, not civilians.
- They do not provide graphics but feel they should – there is demand for this.

FUNDING

- The centre has over 75 funders none of which have contributed more than 5% of the total running costs of approximately £350,000 per year.
- The downside of this model is that fundraising is very time and resource intensive. Half of the full-time staff are involved with fundraising.
- The upside of this model is that the wide funder base – including media, government, science institutes, not-for-profits, publically traded companies, and universities – provides a degree of credibility since the support is widespread and no one organization or sector has the ability to influence activities.
- In-kind funding has been received from a number of sources that provided IT equipment, furnishings, and office refurbishment. The Royal Institution underwrote the operations for the first two years.
- The SMC pays £50,000 annually to the Royal Institution for space, accounting and personnel functions.

GOVERNANCE

- The SMC is governed by a 15-person board of directors that combines a range of experience in science and media.
- The Science Advisory Panel is a group of scientists widely acknowledged as being at the top of their field and who are committed to communicating science in the media, thereby adding credibility to the Centre.
- Its two main jobs are:
  - Vetting the names of scientists and approving their being added to the database.
  - Advising the SMC when their area of science hits the headlines.

Measures of Success

- In 2007, the following measures were reported:

Table 4 U.K. SMC success measures

Measure	Results	Comments
Media briefings	52	• 49 got national media coverage • 12 had 1-3 articles arising; 17 resulting in 4-8 articles; 20 had across-the-board coverage in most national paper, radio and TV. • An average of 13.5 journalists attended, representing U.K. national print, on-line, radio and TV.
Round-up and Rapid Reaction press releases	116	• Tripled the number of press releases over the previous year
Media enquiries	788	• 98% inquiry response rate • 30% of inquiries resulted from SMC activity, the rest were speculative • More than half of the inquiries are on health-related stories.
Interviews	82	• Media call in and the SMC sets up the interview

U.K. Media Perspective

The following is the perspective of one U.K. journalist.

- Before the U.K. SMC, science didn't have a voice.
- It is useful as ONE source, but some journalists use it as the ONLY source. Leads to the coverage across the national newspapers being the same so there is less diversity in science stories.
- Have to keep in mind that they have an agenda – pro-science, pro-mainstream science.
- Provides a national forum for press conferences.
- Experts are coached to provide the information journalists want, which makes them more media savvy.
- For *New Scientist* reporters, it is rarely of value.

- The SMC has been campaigning (lobbying) for some things, e.g., the hybrid embryo debate, trying to influence the law. It is a lobby group like any other such as Greenpeace.
- They act like a news agency – like a wire service for science.
- They are not a neutral organization. They are a special interest group – has never seen them criticize science.
- It is a resource for daily journalists, but the SMC sets the agenda for the journalists.
- The *Guardian* newspaper has decided that it is inappropriate to use the quotes that are sent out in the SMC's backgrounders. The *New Scientist* says the quotes are not useful for them.
- The SMC has increased the amount of science in the tabloids.

Australia

The Australia SMC (Aus SMC) was created when the Baroness Susan Greenfield was "Thinker in Residence" in Australia. One of her roles was to make linkages between Britain and Australia. Initially, a satellite Royal Institute was considered, but the end result was the creation of the science media centre.

The main reason for creating the Australian SMC was to increase the amount of science in the news. The Aus SMC wants the science behind the headlines and science stories from Australia to be covered. Ultimately, they want to inform the debate on issues and help the scientific community to engage the public in discussion.

START-UP

- Initial funding came from the government of the State of Victoria based on the support of the Premier for the initiative.
- The government also seconded staff to start up the centre, found office space in the South Australia Museum with IT support, and collected $150,000 in start-up money.
- Peter Yates, non-executive director of Peony Capital Ltd. and Allco Equty Partners, was an initial backer who helped garner support for the idea in the media as well as funding. He currently holds the position of chair of the Aus SMC board.
- The first step was to commission a feasibility study and "talk-up" the idea around Australia.
- Science journalists were not entirely supportive stating concerns around job loss and being scooped.

- To increase their public presence, centre representatives took part in science/policy roundtables, and attended and presented at a range of conferences including World Conference of Science Journalists (Melbourne, April 2007).
- Made good use of the Internet:
  - Developed website as interactive resource
  - Created "Who's reporting science," a web resource that profiles prominent Australian science journalists
  - Showcased 10 science blogs

OPERATIONS

- The centre deals with the big issues of the day and feeding science into them. They don't try to bring science to the headlines; instead, they bring science to the stories already in the headlines.
- They stress evidence-based science, but include the breadth of scientific opinion, rather than advocating any one point of view – while also trying to reflect the scientific consensus.
- The Aus SMC is an independent service for news reporters when major science news stories hit the headlines; they play a facilitator role between the journalists and researchers.
- Scientists would say the Aus SMC has revolutionized the way science is reported. Journalists would say it has made their job easier because the centre is dealing with the most fundamental issues.
- Media don't make a big distinction between the sciences; the centre often has to debunk pseudo science.
- They run 80% of science behind the headlines; 20% Australian science stories that they push out to the media.
- The research has to be peer reviewed.
- In order to maintain their independence, they gather sponsorships from a wide variety of organizations; they do not want to become a PR agency; they are not selling science.
- They discourage non-journalists from calling as they don't have the resources to serve them.
- There is not a great distinction between science journalists and generalists in Australia (not a lot of science journalists) – the Aus SMC responds to any media inquiry.

- The key factors are credibility and independence; the centre needs to stay agenda-free.
- The Aus SMC is located in Adelaide, not one of the major cities. This location has not been a significant issue but they are considering the establishment of a "node" in Sydney.
- The centre provided an "intro to media" course for early career scientists. The $10 charge and time demand for the scientist made the initiative unsuccessful;
- Staff of six including CEO; media manager (works with the scientists' responses); project manager (database and website); project officer; and office manager. They also have a part-time consultant journalist (big picture, feature briefings).
- The size of the country necessitates the use of on-line briefings.
- As of August 2008, they had over 1,400 researchers in their database.
- Started a new service in 2008 – On the Radar – lunchtime sessions with senior journalists and business people to influence senior science writers/editors.
- The centre is considering providing graphics but sees it as very complex. They will engage scientists to help set up this service and will make the image and footage archive free to journalists.
- Journalists find the backgrounders to be the most useful service.

FUNDING

- There are three levels of sponsorship:
  - Foundation: $30,000 a year for a minimum of two years
    - Funders at this level have representation on the Board of Directors
  - Gold: $15,000 a year for a minimum of two years
  - Less than $15,000 or in-kind
- The size of the country and the need to have a presence in major cities requires a large travel budget
- Annual budget of $500,000 with in-kind support in the way of office space, IT and legal services
- There is a fair turnover in sponsors – each year a few drop off, but new ones come on.
- Securing sponsorships is handled by the chair (media) and executive director (others).

GOVERNANCE

- The Aus SMC is governed by a 21-member board of directors, which meets four times each year.
- Board membership is made up of sponsor representatives plus the Executive Director, a freelance science communicator, and research departments at regional universities (Macquarie and Murdoch).
- A Science Advisory Panel, made up of 27 researchers, professors and emeritus professors, provides advice when needed.

MEASURES OF SUCCESS

- They use media monitoring to provide quantitative data
- Scientists report back to the centre if they become regular contacts for journalists
- Monitor website statistics for material downloads
- The following measures were tracked:

Table 5 Aus SMC success measures

Measure	Results	Comments
Media briefings	18	• *In first 18 months* • Generated over 700 media stories
Rapid Roundups	86	• In first 18 months
Media inquiries	500	• In first 18 months
Science in a Nutshell	7	• In first 18 months
Hot Topics – 2005	3	
Hot Topics – 2006	65	
Hot Topics – 2007	99	
Hot Topics – 2008	80	• To August 27, 2008
Media articles generated from Aus SMC activities	2000	• In first 18 months
Key science topics in the news (over a three-month period)	10,300	• Compares to 3,800 for the same period in the year before the centre opened

AUSTRALIAN MEDIA PERSPECTIVE:

The following is the perspective of one Australian journalist.

- The most important service offered by the Aus SMC is alerts about what is going to be published including on-line briefings of related issues. This is helpful to science journalists and must be even better for generalists.
- With pressure on journalists to deliver more with less, the SMC takes away some of the pressure by monitoring the media to identify big stories, lining up experts, and alerting journalists.
- Initial resistance:
  - Didn't want the centre to be a "booster" for science and issue biased information.
  - Science journalists didn't want others to learn the secrets of their craft.
- A perception of bias would prevent journalists from using the centre's services. So long as governance shows the division between those who run centre and those who fund it, then there is not a problem.
- The services provided by the Centre are useful; it is seen as a labour-saving device and one that improves quality.
- The SMC needs to stay focused on journalists; students, PR people, and the public have other sources of information. If the centre started serving others, the journalists would likely not use it.
- Word-of-mouth is that journalists who use the call-up service are impressed with the turnaround, which leads to higher usage.
- This journalist does not see the provision of graphics as necessary – it would take a lot of effort and possibly detract from other services.
- The physical location of the SMC in Adelaide while the bulk of media are in Sydney does present issues.
- Recommendation to set up the Canadian centre co-located with the World Federation of Science Journalists (located in Gatineau, QC) – which would give the centre some standing.

New Zealand

On June 30, 2008, the government of New Zealand announced the creation of the New Zealand Science Media Centre (SMC NZ).

START-UP

- The Royal Society was awarded the bid to develop and operate the science media centre.
- After approximately three months of consultation with media, the scientific community and other stakeholders, a strategic plan was developed that identified priorities and activities for the centre.
- Total first-year funding was $400,000 of which $115,000 was for database development.

OPERATIONS

- The SMC NZ will be an independent source of expert comment and information for journalists covering science and technology in New Zealand.
- It will feature the opinions of leading scientists on breaking news stories and provide background reports and tools for both journalists and scientists.
- Their aim is to promote accurate, bias-free reporting on science and technology by helping the media work more closely with the scientific community.
- Core audience is journalists – not publishers or editors. They want to keep the services solely focused on the media.
- The services they expect to provide include:
  - Media briefings – may be in person or on-line
  - Media training for scientists
  - Encouraging new scientists to use on-line media (blogs)
  - On-line material – visuals and images
- Staff of three – executive director (former technology editor) plus two part-time media advisors (one with journalism background the other with science background).
- Research shows there is an appetite for a referral service – someone that can be contacted at a moment's notice and is guaranteed to be an expert.

- Their database includes approximately 6,000 experts, many involved in commercialization of science, names were identified from the following:
  - Marsden fund recipients
  - Universities
  - Crown research agencies
- Not all are residents of New Zealand – includes names from U.K., Australia, U.S.A., and Canada.

FUNDING

- This SMC is 100% government funded for the next two years through the Ministry of Science Research and Technology.
- At start-up, this funding model does not appear to be creating an issue around independence and credibility as government funding of agencies is widely used and accepted in NZ culture.
- They have considered the possibility of moving away from 100% government funding down the road.
- The biggest concern for journalists is that, with 100% government funding the SMC become a policy arm for government; the centre will be happy to engage in policy debate but will not reflect government policy as that would lead to a loss of credibility.

GOVERNANCE

- The government issued an RFP in 2007 for someone to establish and run the SMC; the Royal Society won the contract.
- Governed by a five-member advisory board – two with journalism background, one professional scientist, one CEO of a Crown research institute, one policy/government expert.
- The advisory board, which was appointed by the Royal Society, will meet every three months.
- The executive director reports directly to the Royal Society.

INTERNATIONAL SCIENCE MEDIA / INFORMATION SERVICES

The following organizations were identified by the Project Steering Committee as potential effective practice models. This review was not intended to be exhaustive of all organizations that bridge the gap between science and journalists.

World Federation of Science Journalists

The World Federation of Science Journalists (WFSJ) is a non-profit organization representing 39 associations of science and technology journalists from Africa, the Americas, the Asia-Pacific, Europe and the Middle East. It is, in short, an association of associations. Its headquarters are in Gatineau, Québec.

The WFSJ seeks to further science journalism as a bridge between science, scientists and the public. It promotes the role of science journalists as key players in civil society and democracy. The Federation's goals are to improve the quality of science reporting, promote standards and support science and technology journalists worldwide. WFSJ maintains a website to share information about advances and trends in science journalism. Training and networking for science journalists, especially in the developing world, are key priorities.

A major activity of the Federation is the periodic convening of the World Conference of Science Journalists (WCSJ). The fifth Conference brought more than 600 participants in April, 2007 in Melbourne, Australia. The next one will be held in London, U.K. from 29th June – 3rd July 2009.

AlphaGalileo

AlphaGalileo identifies itself as "the world's leading independent resource for European research news". It is a resource for multilingual news, images and experts for the media. It is a "fast and effective way to reach approved journalists around the world. It is operated by an independent, not-for-profit organization, the AlphaGalileo Foundation

AlphaGalileo is a internet-based source for research in the arts, humanities, science, medicine, health, and technology. Its aim is to promote European research by providing a one-stop shop for international media. Over 6,000 journalists are registered with the service, which makes press releases, event details, book announcements, background information, and broadcast material from Europe's research institutes available to the media.

Material is accepted in all languages, and a multilingual team reviews all content and user access. The focus is to highlight research and development, not commercial news. Journalists' registered with the service have access to embargoed information and benefit

from an advanced e-mail-alert system that provides information based on the journalists specified areas of interest, language and dispatch times. The basic information is also available to the general public.

Journalists' access to the services of AlphaGalileo are free of charge. Researchers pay an annual subscription fee of €900 (£600). Several European countries have special fee arrangements with the service.

AlphaGalileo is currently funded through a combination of subscriptions, government grants, commercial sponsorship, and advertising. Funding has been provided at various times by the European Commission and the governments of France, Germany and the United Kingdom.

The Foundation is governed by company members, who are similar to trustees or shareholders. The members appoint the board of directors, who manage the company on a day-to-day basis. In delivering the service, the Foundation's board is advised by a steering committee group consisting of representatives of bodies funding the service.

AthenaWeb

Launched in the spring of 2005, AthenaWeb is a video portal and workspace for European audiovisual communication professionals in the areas of science and scientific information. Contributors and users of the service include institutions, universities, labs, corporations, not-for-profit organizations, and the television and film industry. There does not appear to be any charges associated with using this service for either contributions or access.

AthenaWeb is 100% backed by the European Commission's Research Directorate-General and is run by the science communications agency LAB TO MEDIA. European Union funding for this initiative is geared towards stimulating science communication, increasing film production and distribution, and setting the scene for science, research and innovation to prosper in Europe, and beyond.

AthenaWeb has an extensive list of partners, including AlphaGalileo.

EurekAlert!

EurekAlert! is an on-line, global news service operated by the American Association for the Advancement of Science (AAAS). It provides a central place through which universities, medical centres, journals, government agencies, corporations, and other organizations engaged in research can bring their news to the media, featuring news and resources focused on all areas of science, medicine and technology.

The service is subscription-based for research organizations but free for journalists and the general public. Subscription fees vary depending on the location of the research centre, the years of subscription, the type of institution (not-for-profit vs. for-profit), and level of service. In addition to subscriptions, funding for the website is also gathered through advertising and sponsorship.

The AAAS is a member of the U.K. SMC and contributes $2,000 annually. In return, the AAAS can set up press briefings for U.S. announcements in the U.K. The organization does not have any relationship with the Aus SMC or SMC NZ. There would be interest in establishing a relationship with a Canadian SMC as the AAAS is interested in reaching out to Canadian media.

Knight Science Journalism Tracker

The Knight Science Journalism Tracker is a service for science journalists created and funded by the Knight Science Journalism Fellowship Program at the Massachusetts Institute of Technology and launched in May 2006. It is premised on the belief that if science reporters and editors have convenient and timely access to the work of peers across the country, they can better evaluate and improve their own performance.

The goal is to provide a broad sampling of the past day's science news and, where possible, of news releases or other news tips related to publication of science news in the general-circulation news media, mainly of the U.S. The main sources are U.S. newspapers and wire services plus any English-language stories from abroad that come to attention. The information is provided to registered journalists, public relations officers of scientific institutions, journalism students, and journalism faculty members through daily e-mail notification and RSS feeds. There are no charges for this service.

Science Today at the University of California

Science Today, is a five-day-a-week, one-minute radio program produced for the Westwood One/CBS Radio Network by the University of California. Each week, Science Today features stories highlighting the latest scientific breakthroughs and discoveries at the university and its two affiliated national laboratories. Topics focus primarily on health, nutrition, the environment, and the social and physical sciences. Hosted by Larissa Branin, Science Today airs nationally on various CBS radio affiliates.

Agence Science-Presse

The Agence Science-Presse (ASP) agency has been in operation since 1978. It provides media with information on science-related topics and new technologies. Founded in

Québec, its members are located in French-speaking countries around the world. Users include daily and weekly regional papers that access information using the website.

It is the only science press agency in Canada and the only one in French that serves mass media instead of enterprises. It is unique and it is not-for-profit.

Recently ASP has had a reduction in personnel making it difficult to respond rapidly to inquiries. (Their main competitor is Agence France-Presse and other international centres). To make up the loss of income they now assist with writing science-related school books and TV shows.

Every week, Agence Science-Presse journalists produce a four-page bulletin that is sent to members (either by post or e-mail). Media members can use the content directly in their broadcast. The agency also produces articles, chronicles for the written press and radio on demand on a fee-for-service basis.

Annual access fees of $104 are charged for regional media to access the articles. Web articles are charged on a pay-as-you-go basis. The organization's total annual revenue is $200,000 which includes Québec government funding of $106,000.

6. FEASIBILITY ANALYSIS

The feasibility and success of a science media centre in Canada will be determined in large part by three factors:

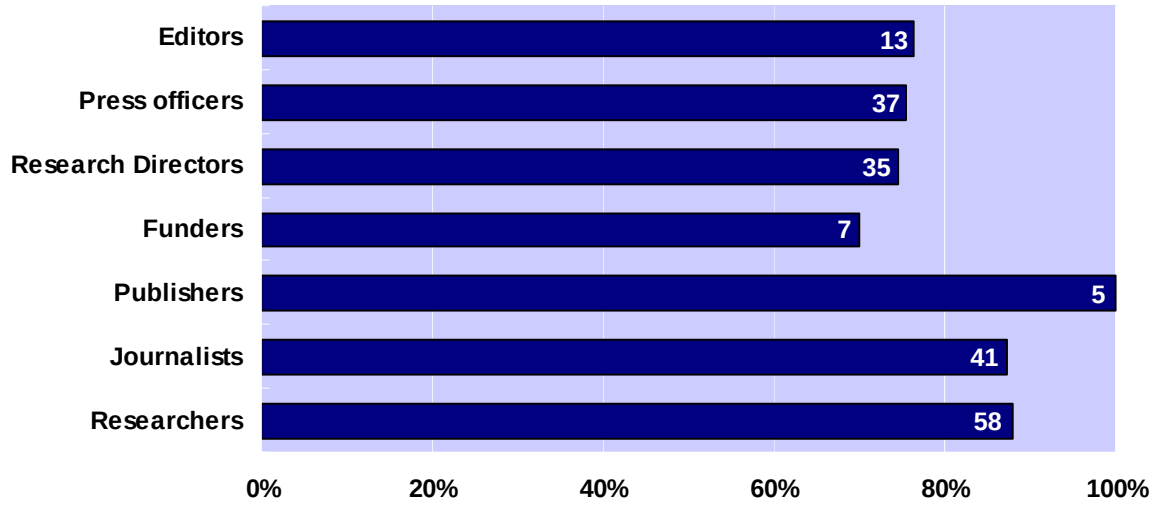
- Support for the idea in the science and journalism communities;
- Funding support from a wide variety of stakeholders; and
- A structure that provides services needed by journalists.

Following is our assessment of these individual factors based on the stakeholder consultation and an environmental scan.

SUPPORT FOR THE IDEA

There is a high level of support for the creation of a Canadian science media centre. While the support is stronger from some stakeholder groups than others, the following chart shows the percentage of respondents by type who said "Yes" when asked if they felt the creation of a science media centre would be useful.

Chart 9 Support for an SMC by respondent type



In individual interviews and focus groups, participants also agreed that the creation of a science media centre would be beneficial to both journalists and researchers.

The majority of researchers who responded to the survey indicated that they would be willing to participate in a science media centre. Many of the other science media centres indicated they would be interested in collaborating with a Canadian SMC and would be willing to provide assistance and guidance during the start-up phase.

FUNDING SUPPORT

The level of interest for providing funding support to a science media centre varied depending on the type of consultation. When asked if they would provide financial support in one-on-one interviews the majority of respondents said "Yes". However, when asked, in the survey, the majority of publishers and potential funders said "No". The difference is that in the interviews there is a greater ability to explain the concept and the benefits, so there is a greater chance of building support for the idea before asking the funding question. Once the potential funders were better acquainted with the concept, they appeared to be more willing to provide support.

This result is supported by anecdotal information gathered from both the U.K. and Australian SMCs that indicated there was an extensive "selling" process to garnering financial support. In both cases, there were champions who canvassed the scientific, business, media, and government communities, established a deep understanding of the goals of the science media centre, and were able to secure adequate funding.

A similar approach would have to be taken in Canada. It may be appropriate to have a variety of champions with specific backgrounds (e.g., research/science, media, and business) in order to make the necessary connections. The stakeholders who indicated that they would be willing to provide financial support represent a variety of organizations across the stakeholder group.

We can conclude that there would be a willingness to provide financial support for a Canadian SMC, but a significant amount of focused effort would be required.

USE BY JOURNALISTS

There are some specific issues that need to be addressed in order to assuage the concerns of many of the stakeholders consulted and ensure broad use by journalists. The main points that need to be considered are:

- **Neutrality** – the SMC must be a neutral body, not taking a position on issues, and presenting multiple scientific viewpoints where appropriate.
- **Duplication** – the SMC should support and complement the services already offered by other organizations in science/research rather than simply duplicating services already offered to media.
- **Accuracy and credibility** – the SMC needs to ensure the information it provides to journalists is accurate and that the experts they identify for journalists are truly experts in their field.
- **Location** – the SMC needs to be able to operate nationally but respond regionally/locally in order to present local/regional contacts and context for science in the news.
- **Focus on media** – in order to be accepted by journalists, the SMC must focus on delivering services to media exclusively.
- **Responsiveness** – the SMC must have the capacity to respond quickly to inquiries from journalists while maintaining accuracy.
- **Language** – the SMC must have the capacity to provide information and experts in both official languages.

Many of these issues were identified throughout all of the consultation approaches (survey, focus groups and interviews); however, much of the concern arose from the respondents not having a clear understanding of the goals and objectives of the proposed SMC.

It will be possible to address all of these issues in either the governance of the SMC or through direct operations. While there will be a variety of services offered through the SMC (as discussed in Section 6), one option may be to use a phased approach offering a select number of key services in the first years and then adding services as use grows.

CONCLUSIONS

In conclusion, it is clear that a science media centre in Canada would be generally well accepted and supported, both conceptually and financially. The research shows that journalists would be receptive to using the services of a science media centre provided it responded in a timely manner with accurate information and offered access to local

scientific experts. Scientists have indicated a willingness to participate in an effort to increase the quality of science reporting in Canada, and funders have expressed an interest in providing financial support within a reasonable limit.

The experience of the U.K. and Australian science media centres provide a foundation of success on which to build, and those centres have indicated that they are prepared to make their expertise and knowledge available to a Canadian science media centre. Universities and research institutes, and media organizations are interested in supporting such an initiative and other related organizations have expressed an interest in collaboration.

The challenge will be to create a centre that meets the unique linguistic and regional needs of the country and that is economically feasible within a self-sustaining financial model.

7. OPERATING MODEL

GLOBAL SMC COMMUNITY

The operational model outlined in this report is tailored to meet the specific requirements of the Canadian landscape. However, the suggested mandate and primary service offerings are similar to those of science media centres in the United Kingdom, Australia and New Zealand.

It is our understanding that South Africa and India are also looking at establishing science media centres, suggesting that a global network of SMCs may soon become a reality. This network may develop a common and collective conceptual approach with each national centre adapting to meet the desires and expectations of domestic stakeholders.

OPERATIONAL MODEL OVERVIEW

The material that follows provides an overview of the elements required during start-up and in a fully functioning Science Media Centre of Canada (SMCC) as well as a discussion of options to be considered during the business-planning phase. The subject areas in this chapter are:

- Overall purpose and goal
- Services
- Operations
- Business model
- Governance
- Contributions and revenue streams
- Operating cost considerations
- Performance measurement

OVERALL PURPOSE AND GOAL

The overall purpose of the SMCC is to help journalists report on stories in which science plays a central role by providing timely access to credible sources of science-related information. This could include everything from items where science *is* the story to stories where science provides the crucial underpinning.

The goal is to achieve even better journalism through coverage of science that is more informed, more accurate, and more incisive to the benefit of the public, the science and journalism communities, and policy-makers.

Mandate

The mandate of the SMCC will be to provide journalists access to qualified researchers and accurate information by their deadline to support reporting of evidence-based stories. This means responding to the media in a timely and efficient manner; identifying and anticipating science-related issues; and being prepared with backgrounders, briefings and fact sheets. The SMCC will be the go-to place for credible science information and experts.

In support of this mandate, the SMCC will assist scientists working with the media in a responsive and meaningful way. This means the centre will want to ensure scientists are well versed in working with the media and can communicate in lay language.

The number and type of services offered by the SMCC will grow and evolve as the organization becomes established. As other SMCs have matured, they have become more adept at alerting the media to science-related stories rather than waiting for a story to emerge.

Users

The overarching work of the SMCC will be to support general assignment reporters covering science-related stories. These reporters include staff reporters and freelancers in all sectors of the media (print, broadcast, and on-line) as well as editors and producers. While reporters who specialize in science may initially not access the services of the SMCC, other science media centres have found that these reporters have made use of their services as confidence in the quality and integrity of the centre grows.

Researchers will participate as experts and use select services, such as media training. Based on the experience of other science media centres, providing services to the research community is a way of attracting scientists, building confidence in the centre, and improving communications between scientists and journalists.

Others may also benefit from materials prepared by the SMCC including public information officers; business professionals; policy-makers; students; and teachers. While information on the SMCC website will be available to all internet users, only reporters, scientists and member organizations (discussed below) should have access to briefing materials and other information specific to them.

SERVICES

Services for reporters

The SMCC's service offerings for reporters must include:

- Timely response to phone and e-mail inquiries from journalists for subject-matter experts and information that is current and credible;
- Scientific information about breaking news on the SMCC website and in the form of briefings, fact sheets, backgrounders, press releases, articles, and potentially quotes;
- E-blasts/bulletins about science in the news;
- Advance notice of journal articles and other relevant story ideas;
- Insight into using statistics, scientific terminology, definitions, and concepts;
- Identification of reliable and credible websites; and
- A comprehensive list of science conferences in Canada.

The SMCC may also want to offer the following services either immediately or as the centre matures:

- A synopsis of researchers' opinions about a new issue; and
- Roundtable discussions that bring together scientists and journalists.

Journalists have indicated that access to images, videos and graphics is desirable service. Despite the increased cost inherent in developing and maintaining this service, it would add interest and credibility to the centre from the outset, and potentially be considered an attractive feature from a funder's perspective. It would also differentiate the SMCC from other science media centres. None of the existing SMCs offer this service.

Services for researchers

Initially, services to the research community should include:

- Media training (on-line and/or in person) to prepare scientists for interviews; and
- An on-line media guide, that provides advice on how to effectively communicate with a reporter in a short news interview.

Other services might include informal brainstorming sessions and roundtable discussions that bring together journalists and researchers to explore effective ways of communicating complex scientific information to the public.

Also, the SMCC should explore opportunities for collaborative programs and with universities and research centres that provide similar services.

Other services

Organizing and hosting briefing events or news conferences for members, partners and/or non-member research organizations might also be offered. These services could be covered by membership fees or carried out on a fee-for-service basis, particularly for non-members. (A membership model is discussed later in this document.)

OPERATIONS

This includes linguistic considerations, geography, staffing, hours of operation, service-delivery activities, and technology.

Linguistic considerations

It is clear from the research findings that to be successful and credible, the SMCC will need to offer the same quality of services to journalists and scientists in both official languages. Options to address this include:

- Creating a centre that is fully bilingual, which will allow for greater consistency and comprehensiveness in both languages; or
- Developing a partnership/collaborative agreement with an existing related organization such as Agence Science-Presse or the World Federation of Science Journalists, both headquartered in Québec, to become the Francophone partner of the SMCC. This enables the SMCC to build on the expertise and credibility of an existing organization; however, it requires a high degree of communication and collaboration.

Regardless of the option selected, as a fully bilingual organization, the SMCC must provide national exposure for French-speaking scientists.

Geography and location

There are compelling arguments for establishing the SMCC in any number of locations. However, in a world of on-line communications, the physical location of the SMCC is of less importance than the depth and integrity of the services it offers.

Editors and producers prefer stories with local experts and/or content, so it will be important for the SMCC to have local knowledge and provide access to local experts across the country.

Regardless of the location of its headquarters, the SMCC must have the necessary technology to readily engage journalists and scientists in a virtual environment.

Several options exist for the SMCC to address geographic concerns:

- **Centralized Model** - a centralized operation physically located in an area where a large number of media organizations, journalists and researchers are located. This will require a high degree of dependence on media monitoring and/or strong links with the science community and public relations people to identify regional stories and issues.
- **Collaboration/Partnering Model** – this model is essentially the same as the centralized model above but would include a partnership with a Québec organization to deliver French-language services, including press conferences and media briefings.
- **Decentralized Model** - this model includes having a small, centralized staff in one location with other employees distributed around the country. This model offers the benefits of a regional presence but with the management oversight of a single organization.

Both the collaboration/partnering model and the decentralized model require a high degree of coordination and communication not necessary in the centralized model or in place in other science media centres elsewhere. This adds a degree of complexity and cost that will need to be carefully considered.

Implementation

Once a commitment for seed funding has been secured and the senior employee responsible for leading and managing the centre hired, the first year should be a start-up year during which no services are offered. This year should be used to build the foundational elements on which the science media centre will deliver its services. These include but are not limited to:

- Recruiting and orienting a board of directors and a research advisory panel;
- Developing, testing and refining internal operating processes;
- Developing or acquiring the researcher database;
- Recruiting scientists and other experts to be included in the database;
- Building relationships with the media, research, business and government communities;
- Researching and developing backgrounders and briefing materials;

- Researching and securing images, videos and graphics (if they are part of the service offering);
- Developing media training programs and guides for researchers; and
- Securing space and setting up the office(s).

Depending on the amount of seed funding available, fundraising may need to take place in the first year and will almost certainly need to be under way in year two.

Human resources

The staff complement discussed below assumes a centralized model similar to other science media centres and does not take into consideration bilingual or geographic needs.

Based on the experience of the other science media centres, start-up staffing will require three full time equivalent employees (FTE), and as the SMCC evolves over a period of two to three years, an additional two to three employees will be required. The Australian SMC currently has 5.5 FTEs after three years of operation, and the U.K. SMC, now in its sixth year of operation, has six. In its start-up this year, the NZ SMC has three employees.

Current staffing in the three SMCs is shown in the table below.

Table 6 Staffing in the SMCs

Australian SMC	U.K. SMC	NZ SMC
• CEO • Media Manager • Project Manager • Office & Corporate Relations Manager • Project Officer • Consultant Journalist (part-time)	• Director • Senior Press Officer • Press Officer • Engineering Press Officer* • Science Information Officer • Centre Co-ordinator	• Manager • Media Advisors (2)

** Sponsored and supported financially by a national engineering association*

Competencies that will be required in the SMCC include:

- Leadership, management and administration;
- Relationship building;
- Fundraising;

- Research and analysis;
- Project management;
- Media and public relations;
- Reporting and writing;
- Working with scientific subject matter;
- Graphics and animation;
- Legal and financial; and
- Information technology.

While the Centre could hire or contract all of its human resources over time, it would certainly be advantageous to identify partner organizations willing to second employees or underwrite their salaries in some other way (as is the situation with the Engineering Press Officer in the U.K.). Optionally, the SMCC may want to work with its member organizations to rotate one or two personnel through the centre on an annual basis to provide for employee development and at the same time contain the costs of the SMCC.

Challenges that the existing science media centres have not encountered include the linguistic and regional issues the science media centre in Canada will need to address.

Hours of operation

The SMCC will need to provide a full range of services in all time zones across the country from 8:00 am to 8:00 pm. How to respond to after-hours inquiries will need to be addressed. The Australian SMC provides a number on its website to call during non-business hours. The U.K. and NZ SMCs' websites make no mention of non-business hours but in all three, e-mail communication is an option. It is not clear whether e-mails are answered on a 24/7 basis.

The SMCC might consider a triage process that will allow it to assess the urgency of an inquiry to determine the speed with which it responds, particularly during non-business hours.

Technology

The SMCC should be a virtual organization enabled by sophisticated technology to communicate, engage and collaborate efficiently and cost-effectively with reporters, scientists, partners, and other science media centres across the six Canadian time zones and around the world. This technology should include a user-friendly website that is updated regularly; collaboration tools to facilitate on-line participation; and webcasting, videoconferencing and teleconferencing capabilities.

The researcher database is the central piece of service delivery software. The Australian SMC has offered the SMCC access to its database and assistance with setting up a Canadian equivalent. The SMCC should explore this offer more fully once the requirements for its database have been determined. These requirements may include discussion with the other SMCs to explore the potential of integrating databases, possibly allowing for expanded functionality and a considerably greater number of contacts.

If the SMCC decides to offer animation, video and graphic images, it should investigate developing a partnership/collaborative relationship with an institution with expertise in these competencies.

Business Model

In determining the most appropriate business model, it was assumed that the SMCC would be independent and not linked to government or a business, and that no one individual or organization would profit financially from the SMCC. Therefore, a not-for-profit model is the recommended option. However, within this model, the SMCC should consider the following options. These options are not mutually exclusive or exhaustive:

- **Membership model** – members typically receive benefits in return for their membership fees. . This model promotes loyalty and engagement and is a revenue generator for the organization.
- **Charitable organization** – charitable status enables the organization to raise revenues through a variety of methods while providing taxable benefits to its supporters, allowing for a great deal of flexibility. An experienced fundraiser is required for the model to be truly successful.
- **Co-operative organization** –investors or members purchase part ownership in the organization. In general, surpluses are returned to members once a general reserve and the capital required for financing expansion of the business is in place. This model is complex to establish because it requires involvement of many people to agree on a structured process and bylaws, but in return, members are often more highly committed to the success of the organization.

Governance

The Australian and U.K. SMCs have a board of directors and a scientific advisory board/panel. The NZ SMC has only an advisory board that provides strategic counsel and advocates for professional science reporting.

The research conducted in the context of this study has shown that the support and efforts of a champion are essential to the success of a science media centre. This individual(s) is the driver required to marshal the funding and support for the organization, particularly in the start-up phase. This individual may also be the first chair of the board.

Board of Directors

Once the business model has been determined, several considerations are important in selecting the governance model for the SMCC. They include:

- Defining the role of the board and responsibilities of board members; and
- Recruiting individuals from across the country, with an appropriate mix of regional, bilingual and private/public representation.

Defining the role of the board is important from the outset to ensure that the board functions effectively in supporting the mandate of the organization. Board members must be clear about their roles and responsibilities in setting strategy and policy, fundraising, public relations, and supporting the management and operations of the organization.

Options for the composition of the SMCC board of directors include:

- Representation from the science and media communities only. This option would provide a clear focus for the organization but may ultimately lack the broader perspective others could bring to the dialogue, decision-making, and resourcing.
- Representation from key stakeholders: scientists, reporters, funders, businesspeople, and government. This option assumes that there is a cap on the contribution from individual funders, as discussed later. The benefit of this option is that it would bring a broader range of perspectives to the SMCC.
- Charter members who provide seed funding initially and then other top funders who are granted a seat on the board in return for their investment. While this model has been used successfully in Australia, the research for this study has shown that there is little support within the SMCC stakeholder community for representation on the board of directors to be linked to financial contributions or level of membership.

There are a number of options for selecting board members. They include:

- Inviting individuals to serve on the board, which is a very selective process at the discretion of a specific committee. This is a somewhat arbitrary and subjective way of selecting board members and may not appeal to the SMCC stakeholder community. However, it is a way of ensuring that specific interests and expertise are present on the board.

- Offering a board seat in return for investment, which provides incentive for funders, although there is little support for this model as noted above. Regardless, it is one way of attracting funders and has proven to be successful elsewhere.
- Soliciting applications or nominations to the board, an accepted democratic process that would allow for a more diverse group of candidates to step forward. This approach may be time consuming as it requires development of a transparent selection process.

Research Advisory Panel

Similar considerations are necessary in recruiting a research advisory panel (RAP). Additional consideration will need to be given to the following:

- Including representation from universities, government, and the private sector;
- Linkages to the board and staff; and
- The role of the RAP in recruiting experts to be included in the database.

CONTRIBUTIONS AND REVENUE STREAMS

There are two distinct sources of funds needed by the SMCC. There are funds made available on a one-time basis to cover start-up costs and top-up funds for early operational periods, and then there is a stream of revenue expected to cover the cost of operating the SMCC on a go-forward basis.

Start-up costs

Start-up funding for the Australian science media centre was provided by government to allow for a development year and the first year or two of operations. The U.K. SMC received seed funding from a single private donor. Other options to be explored include funding from a foundation, donations from individuals, and/or a contribution from a champion whose organization might set up an endowment.

These contributors are not necessarily the same as those who will fund the ongoing operations. This approach secures funding for a period of two to three years to allow the organization sufficient time to become fully operational and establish the funding process.

A gala or some other event, perhaps hosted by a champion and well-known personalities, may provide a good opportunity to raise money for the start-up and contribute to the ongoing operating funds.

Revenue streams

Both the U.K. and Australian SMCs operate on a membership model that provides the core funding for the organizations.

The U.K. funding model has a large number of members/funders all at the same level and any one member/funder is capped at 5% of total annual operating costs so that no one organization is perceived to have greater influence on the SMC. This model requires a high degree of continuous fundraising but is seen to be inclusive and neutral. There are some 75 members in the U.K. SMC.

The Australian model has a smaller number of funders, approximately 20, at three different funding levels, and the top-level funders are entitled to a seat on the board. In fact, the majority of funders are at the top level. This model requests funders to make a two-year commitment, and while it provides longer-term funding, it may be more difficult to secure.

Any funding model must contain these features:

- Representation from a variety of sectors (government, private sector, university/research institutions, etc.);
- A cap on the number of funders from each sector;
- Representation from across the country; and
- Both Francophone and English representatives.

Based on stakeholder input, there appears to be widespread support for capping funders at a maximum of 5% of total revenues. Funders should have the flexibility to contribute fees at varying amounts less than 5% abd should have access to the same benefits, regardless of the amount of the contribution.

Other sources of revenue

Other sources of revenue might include the following:

- Annual subscription fees for research organizations and other partners. For example, the American Association for the Advancement of Science (AAAS) pays the U.K. SMC an annual fee of $2,000. In return, the SMC organizes and hosts press conferences for the AAAS and helps promote American science to the U.K. press.
- A fee for access to information from other users.
- Fundraising events and activities such as gala dinners, awareness campaigns, major gifts, and monthly donations.

OPERATING COST CONSIDERATIONS

The operating costs of the SMCC will be driven by the operating model selected and the level of services provided. This section outlines some of the costs likely to be incurred together with preliminary budget estimates, where feasible. All items are treated as expenses even if they could be delivered in-kind by a supporting stakeholder.

The costs provided below are based on the costs incurred by the U.K. and Australian SMCs and knowledge of the Canadian marketplace. These costs will need to be qualified in the business-planning phase.

Human resources

A centralized model, such as that found in the U.K. and Australia, could operate well with a staff of five or six full-time equivalents. There would be a CEO or Managing Director position supported by middle management and varying staff positions. Total wages in Australia at present are approximately A$360,000. Accordingly, it would be reasonable to expect a budget of $300,000 to $400,000 once the SMCC is fully operational. The salary expenses in the start-up and early operational periods will be directly related to the speed associated with building the membership base, creating awareness levels and building delivery capacity.

The following features would likely increase expected salary costs:

- A decentralized model may require both an increase in the number of employees and potentially more senior people overall;
- A decision to operate a fully bilingual SMC may also raise individual salaries or possibly require an additional resource;
- An operating model that requires the ability to deliver graphic and video images will necessitate the addition of appropriately qualified staff; and
- The selection of the SMCC site will also have an impact on salaries.

Delivery cost

The nature of the services provided will have a direct impact on the expense structure relating to the delivery of services.

WEBSITE AND IT INFRASTRUCTURE

The SMCC website would likely be built during the start-up period and then maintained and updated on an ongoing basis. The costs associated with this work could vary significantly, but it is likely that the website would cost at least $25,000 to build, with annual

expenses of $5,000 to $10,000 and more should the site be bilingual and/or have a high degree of graphic capability.

IT support would likely run $25,000 a year including a centralized server for the network of personal computers, database management and website hosting.

The database will be the single largest part of the IT infrastructure and will be developed in the first year. The Australian SMC has offered to provide a copy of their database, at no cost, which would provide significant savings; however, database requirements would have to be carefully considered before taking up this offer. If the SMCC were to pursue the development of a custom database, the cost could range from $50,000 to more than $100,000. (New Zealand has invested $115,000 in their database development.)

Marketing and Branding

Marketing and branding will be critical in the start-up period and into the first year. After this, there may be a reduction in effort required. These activities will drive both use and fundraising, and will augment the efforts of both the champion and CEO during the start-up phase. While much of the awareness and public relations activity will stem from the relationships and networks of the principals, it is reasonable to expect upfront costs of $50,000+/- for a marketing plan and collateral, and an annual budget of approximately half that in subsequent years.

Travel

The degree of travel will vary considerably depending on whether the chosen operational model is centralized or decentralized and whether the users accept a high degree of virtual interface. Both models will require some travel to meet face-to-face with SMCC users across the country to ensure a regional presence. Therefore, a budget of $10,000 to $15,000 is reasonable for start-up with growth expected to match higher use and visibility as time goes on.

Training and Project Costs

It would be entirely arbitrary to estimate the training and costs related to delivering briefings and participating in conferences. The volume of such activity would be expected to increase as the SMCC expands its services and user base.

Administration

This category of expenses relates primarily to the fixed costs associated with running the organization.

Rent

This cost will vary greatly depending on whether a centralized or decentralized model is adopted, the location is in a major urban setting or a smaller centre, and the class of building selected.

Office / Other Expenses

Items such as telecommunications, postage and delivery, paper, and photocopy services are variable based on volume of activity. Professional fees will vary in the start-up period as will annual legal and accounting fees depending on the services required.

Capital Investment

The capital costs required to set up the SMCC would consist of computers and related software for each staff member and furniture for the office. The cost of the computers will be spread over the start-up period and should cost approximately $2,000 each for a total of $12,000 for a staff of six people.

There will be incremental hardware and software costs associated with graphics capabilities; therefore, the database and operation systems costs could vary tremendously. Office and boardroom furniture, filing cabinets, whiteboards, and miscellaneous items could be expected to total approximately $20,000.

It may be appropriate to capitalize some of the start-up costs, but this is an accounting rather than a funding issue.

Start-up funding

For purposes of this report, start-up costs are one-time, non-recurring expenses associated with launching the organization as well as operational expenses incurred before the centre actually begins operating. These include:

- Rent;
- Salary of the CEO and, possibly, an administrative support person;
- Website and IT services;
- Database development;

- Marketing and branding – often representing a sizeable investment in one-time activities; and
- Travel costs for the CEO and the champion as they solicit members and support as well as getting the message out across the country.

In-kind contributions

It is likely that the SMCC will benefit from in-kind contributions from supportive organizations and/or individuals, possibly in return for some type of recognition. Expense items that could be reasonably covered in whole or in part would be:

- **Rent –** this could represent partial or full-cost value of up to $40,000. The SMCs in both the U.K. and Australia are located in premises belonging to strategic partners.
- **Marketing and branding** –the SMCC would benefit from contributions in this area particularly in the start-up phase. This could include assistance with developing marketing and branding plans and collateral, placement of public service announcements and other items that would bring exposure to the organization.
- **Website and IT services** – these items, including hosting, will be of critical importance to the new organization. It is anticipated that some or all of these services may well be donated by one of the founding members. As already mentioned, the Australian SMC has offered help in setting up the Canadian database.
- **Payroll and accounting services –** the SMCC will have a small staff, and the cost of providing such services by a member would be quite low. The provision of accounting and other administrative support would be a significant benefit, and it is reasonable to expect that these services may be provided by a member organization.
- **People –** opportunities for seconding personnel or salary contributions should be investigated. This may include having an individual focus on a particular area of science as the U.K. is currently doing with a partner in the field of engineering.
- **Other –** additional opportunities for in-kind contributions could include computers, telecommunications, software, translation, IT support, legal, accounting and auditing support, media monitoring, event hosting, and conference space.

PERFORMANCE MEASUREMENT

It will be important for the SMCC to measure its success in attracting journalists, scientists and funders. This will require that tracking and reporting mechanisms be put in place that measure progress against the mandate and defined objectives. The performance-measurement methodology should measure not only outcomes over a period of time but also suggest corrective actions to promote the ongoing sustainability of the organization.

Based on the performance measures used at other science media centres, the following represent some of the measures that should be considered:

Table 7 Suggested performance measurements

Numbers-based Measurements	Outcomes-based Measurements
• Number of inquiries • Number of briefings • Number of different journalists using the service • Number of participants in briefings • Number of scientists in database • Website statistics	• Number of enquiries resulting in an interview and/or story • Increase in Canadian scientists being asked for interviews • Perceived quality of science reporting (This could be done through a media analysis.)

8. NEXT STEPS

This study confirms that a science media centre in Canada is feasible. With the appropriate service offerings, it will be used by journalists and scientists, and with the engagement of committed and suitable champions, funding should be achievable both for start-up purposes and on an ongoing basis.

The next step is to develop a comprehensive five-year business plan that establishes the strategic priorities for the SMCC; expands on the operational and governance considerations described in this study; outlines the revenue streams and costs in some detail; and defines an implementation timetable. This plan should be used as a tool in recruiting the CEO, champions, funders, board members and the research advisory panel. It should also provide the foundation for a marketing/branding plan and a detailed implementation plan.

APPENDICES

Appendix A – Focus Group Participants

Appendix B – Individual Interview Participants

Appendix C – Workshop Participants

Appendix D – Survey Respondents Descriptions

Appendix A – Focus Group Participants

Participant	Organization	Focus Group Location
Dr. Julia Boughner	CJSW (regional – Alberta and BC)	Calgary
Ted Henley	660 AM (regional and national, by email)	Calgary
Alison Myers	CBC Radio News (national)	Calgary
Lisa Robinson	CBC Radio, Wild Rose (regional)	Calgary
Francis Silvaggio	Global TV (national, by phone)	Calgary
Dawn Walton	Globe and Mail (national)	Calgary
Kevin Cox	allnovascotia.com	Halifax
Peter Halpin	Association of Atlantic Universities	Halifax
Jim Meek	The Chronicle Herald	Halifax
Rob North	CBC-Radio Maritimes	Halifax
Josée-Nadia Drouin	Agence Science Presse	Montréal
Dominique Forget	Axone Communications	Montréal
Pascal Lapointe	Agence Science Presse	Montréal
Raymond Lemieux	Québec Science	Montréal
Véronique Morin	World Federation of Science Journalists	Montréal
Patricia Perron	Elle Québec	Montréal
Guylaine Proulx	Université Laval	Montréal
Mélanie Robitaille	Freelancer	Montréal
Jacob Berkowitz	Quantum Writing	Ottawa
Lyse Huot	Association of Universities and	Ottawa

Participant	Organization	Focus Group Location
	Colleges of Canada	
Dore Dunn	Natural Sciences and Engineering Research Council of Canada	Ottawa
Randy Boswell	CanWest news service	Ottawa
Leslie Cole	Association of Universities and Colleges of Canada	Ottawa
Blair Dickerson	Natural Sciences and Engineering Research Council of Canada	Ottawa
Paul Dufour	NRCAN	Ottawa
Mark Henderson	Research Money.Inc	Ottawa
Margaret Kennedy	National Research Council	Ottawa
Tim Lougheed	Canadian Science Writers Association)	Ottawa
Veronique Perron	Canadian Institute of Health Research	Ottawa
Scott Anderson	CanWest Media Works	Toronto
Ira Basen	CBC	Toronto
Rick Bogacz	News, Microsoft.com	Toronto
Bryan Cantley	Canadian Newspaper Association	Toronto
Lou Clancy	Toronto Sun	Toronto
Ian Johnson	CBC Online News	Toronto
Wendy McCann	Canadian Press	Toronto
Sean O'Malley	CTV News	Toronto
Graham Parley	Toronto Star	Toronto
John Racovali	National Post	Toronto

Participant	Organization	Focus Group Location
David Walmsley	The Globe and Mail	Toronto
Shannon Miller	The Province	Vancouver
Eve Savory	CBC News	Vancouver
Rebecca Scott	CKNW	Vancouver
John Danakas	University of Manitoba	Winnipeg
Helen Fallding	Winnipeg Free Press	Winnipeg
Janine HarasymchU.K.	University of Manitoba	Winnipeg
Leah Janzen	University of Manitoba	Winnipeg
Frank Nolan	NSERC	Winnipeg

Facilitators and note-takers:

- Peter Calamai, Canada Foundation for Innovation
- Suzanne Corbeil, Canada Foundation for Innovation
- Yves Melanson, Canada Foundation for Innovation
- Mary Anne Moser, University of Calgary
- Grady Semmens, University of Calgary
- Penny Park, Discovery Channel
- donalee Moulton, Halifax Global Inc.
- Penny Whitwell, Halifax Global Inc.

Appendix B – Individual Interview Participants

Name	Title	Organization
Media Related Organizations		
Tim Lougheed	Freelancer	Canadian Science Writers' Association
Katherine O'Hara	Professor	Carleton School of Journalism and Communications
Stephen Ward	Adjunct Professor	UBC Journalism School (Science Media)
Universities and Research Institutes		
Neil Boucher	VP Research	Université de Moncton
John Hepburn	VP Research	University of British Columbia
Myles Frosst	CEO	Agriculture Institute of Canada
SMCs in other jurisdictions		
Susannah Elliott	CEO	Australia SMC
Fiona Fox	Director	SMC U.K.
Peter Griffin	Manager	NZ SMC
Ginger Pinholster	Director, Office of Public Programs	American Association for the Advancement of Science
Wilson da Silva	Journalist	Cosmos Magazine, Australia
Pascal Lapointe	Editor- in-Chief	Agence Science Presse
Josee-Nadia Drouin	Executive Director	Agence Science Presse
Government		
Matthew King	ADM	Industry Canada
Karen Corkery	Acting DG	Portfolio Coordination
James Rajotte	MP	Edmonton Southwest
Potential Funders		
Peter Schram	Director of Corporate Communications	Glaxo Smith Klein
Rhonda O'Gallagher	Director of Corporate Communications	Pfizer

Name	Title	Organization
Sandrine Michard	VP of Corporate Communications	L'Oréal
Virginie Hotte-Dupuis	Corporate Communications	L'Oréal
Andrea Ranson	Director of Corporate Communications	Petro Canada
Tony Vander Voet	Acting Associate Deputy Minister	Ontario Ministry of Research & Innovation
Kirk Falconer	Director of Research	Thomson Financial
Faisal Moola	Science Director	David Suzuki Foundation
Judy Noordermeer	Director of Communications	National Cancer Institute of Canada
Community of Interest		
Linda Quattrin	Director of Communications	MaRS Centre
John Matlock	Director of External Relations and Outreach	Perimeter Institute
David Colombe	Media Specialist	CIHR Science Communications
Preston Manning	Director	Council of Canadian Academies/Manning Centre
Peter Nicholson	President and CEO	Council of Canadian Academies

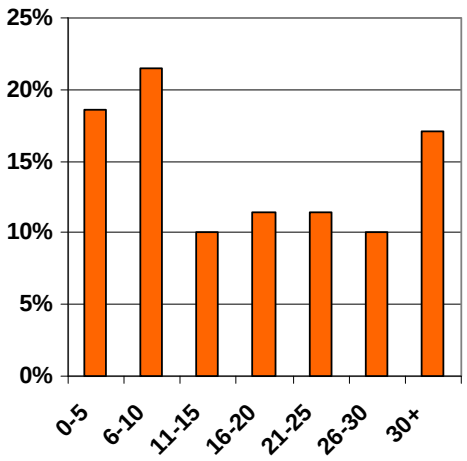
Appendix C – Workshop Participants

Name	Organization
Peter Calamai	Canada Foundation for Innovation
Jeff Carruthers	Carleton University
Suzanne Corbeil	Canada Foundation for Innovation
Blair Dickerson	NSERC
Josee-Nadia Drouin	Agence Science-Presse
Paul Dufour	Natural Resources Canada
Jean-Marc Fleury	World Federation of Science Journalists
Paul Fraumeni	University of Toronto
Jim Handman	CBC – Quirks and Quarks
Renee Harden	Natural Resources Canada
Christine Harminc	National Cancer Institute of Canada
Pascal Lapointe	Agence Science-Presse
John Matlock	Perimeter Institute
Yves Melanson	Canada Foundation for Innovation
Mary-Ann Moser	University of Calgary
Kathryn O'Hara	Carleton Journalism School
Linda Quattrin	MaRS Centre
Penny Park	Discovery Channel
Tony Redpath	MaRS Centre
Mathieu-Robert Sauvé	Association des communicateurs scientifiques
Allison Sekuler	McMaster University
Molly Shoichet	University of Toronto
Mark Winston	Simon Fraser University
Michael Smith	Journalist

Appendix D – Survey respondent descriptions

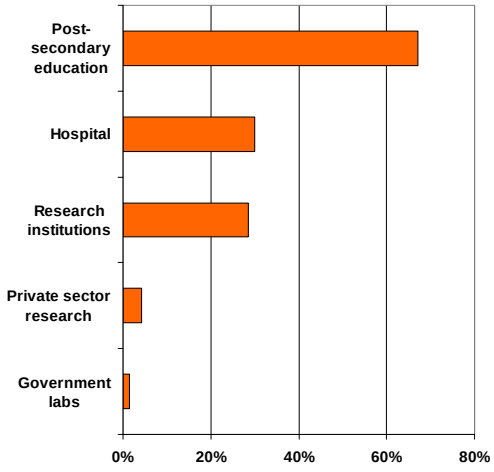
RESEARCHERS

By years of research experience



- 70 researchers responded to this question, ranging from researchers who have just started their research careers to those that have over 30+ years of experience.
- This distribution of respondents will provide a wide range of perspectives.

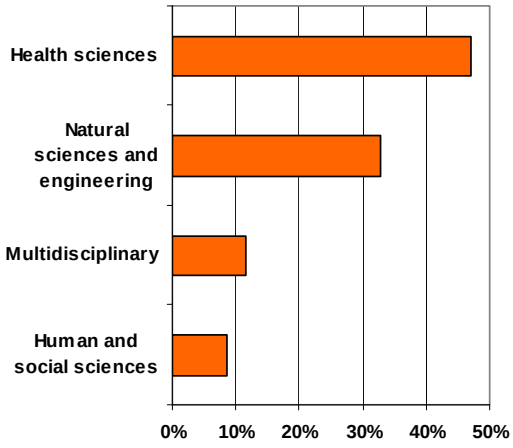
By type of research institution



Given the prevalence of post-secondary education institution based research in Canada, it is possible that this distribution is a fair replica of the distribution of researchers in Canada.

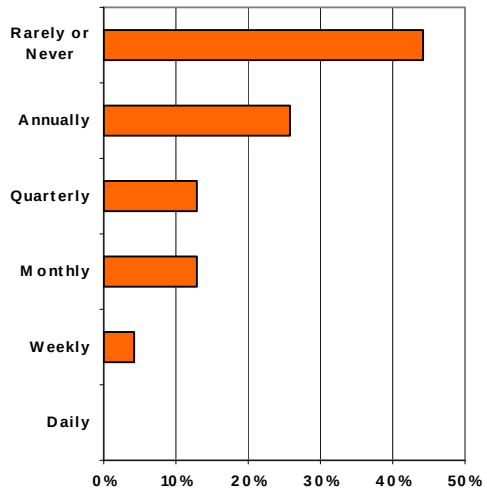
- 47 of the researchers who responded are employed in post-secondary education settings.
- 21 are employed in hospitals and 20 are working at research institutions.
- 3 researchers who responded are employed in the private sector and
- Only 1 in a government lab.

By research sector



- Close to 50% of the researchers who responded are working in the area of health sciences,
- just over 33% are in natural sciences and engineering,
- 11% are multidisciplinary and
- 9% work in the area of human and social sciences.

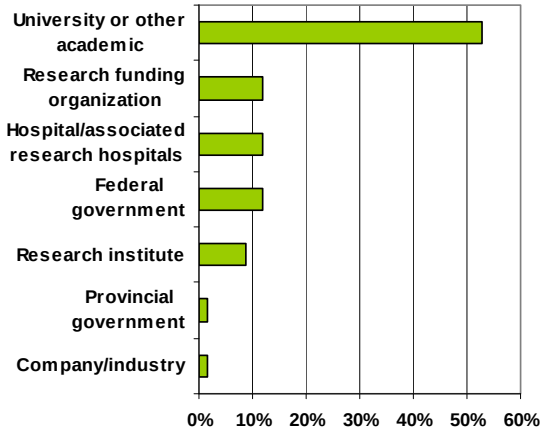
How often do they respond to media inquiries?



- 31 of the researchers who responded rarely (or never) respond to media inquiries
- 18 respond to enquiries once a year
- 9 respondents receive media inquires quarterly
- 9 receive them monthly.
- Only 3 respondents respond to inquiries on a weekly basis.
- None of the researchers who responded are approached on a daily basis.

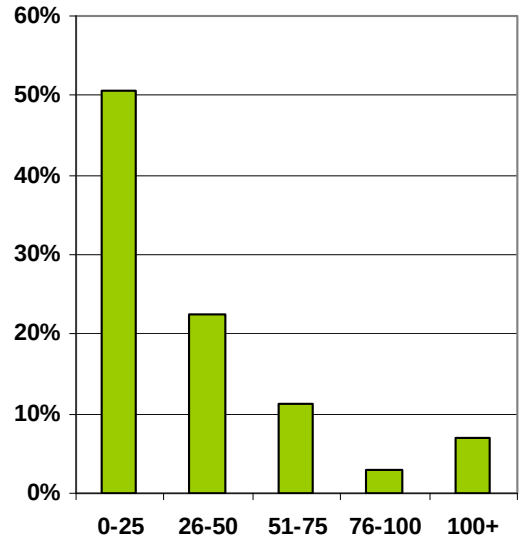
PRESS OFFICERS

By type of research institution



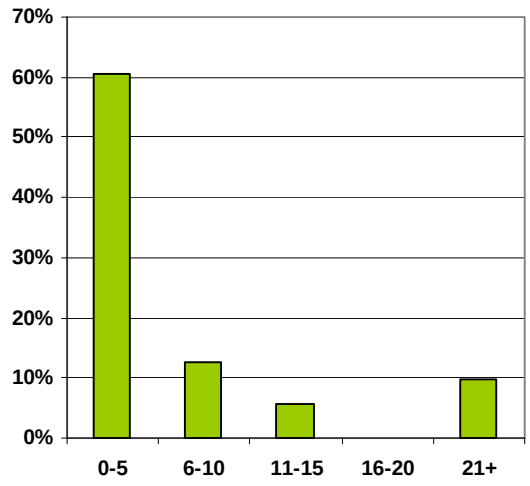
- Similar to researchers, the majority of press officers who responded to the survey are employed at universities or other academic institutions.

Number of science related news releases issued annually



- 36 of the 71 press officers who responded indicate that they issue fewer than 25 science related news releases annually
- 16 release between 26 and 50 science related news releases
- Only 4 release more than 100

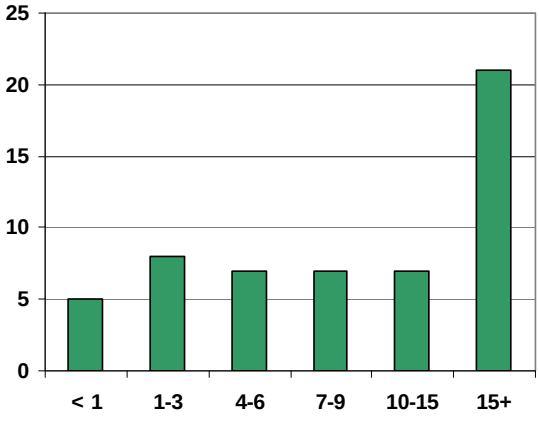
Number of media inquiries received annually



- 43 of the 71 press officers who responded to this question respond to fewer than 5 media enquiries per week.

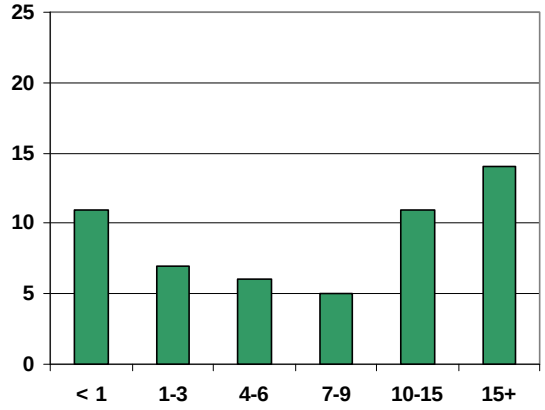
JOURNALISTS

By number of years writing



- Of the 55 journalists/writers who completed the survey, 21 have been writing for more than 15 years.
- The remaining 34 are evenly dispersed between <1 and 15 years.

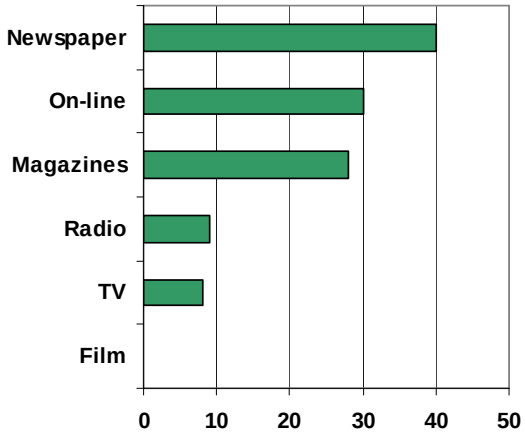
By number of years writing science related stories



While the majority of journalists who responded have been writing science related stories for more than 10 years, we also received responses from 11 writers who have been working in this area for less than one year.

Having a good representation from both new and experienced science writers will ensure both perspectives are reflected in out analysis.

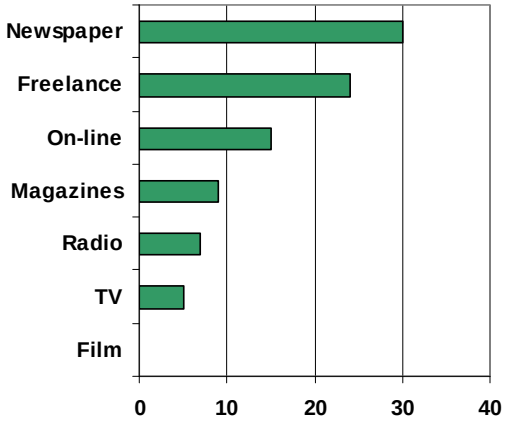
By types of media they write for



The majority of journalists who responded write for newspapers, on-line publications, and magazines. Relatively few of the respondents write for ratio or television. In addition, respondents indicated they also write for the following:

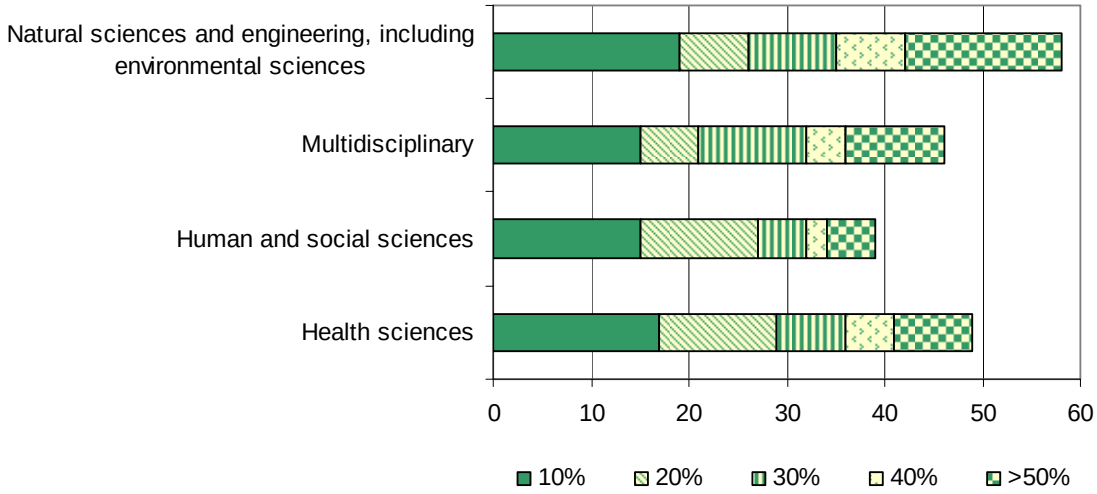
- Books – science fiction
- Contract writing
- Exhibitry
- Museology

By types of media organization they work for



- 30 of the 54 writers who responded work for newspapers
- 24 of the writers are freelance, which reflects the makeup of the industry
- 15 writers work for organizations that publish on-line, which reflects the increasing importance of on-line publishing in Canada

By research sectors reported and amount of time spent on that sector



A total of 67 journalists responded to this question, indicating that they write about the following:

- Natural Science and Engineering, including Environmental Science – 58
- Multidisciplinary – 46
- Human and Social Sciences – 39
- Health Sciences – 49

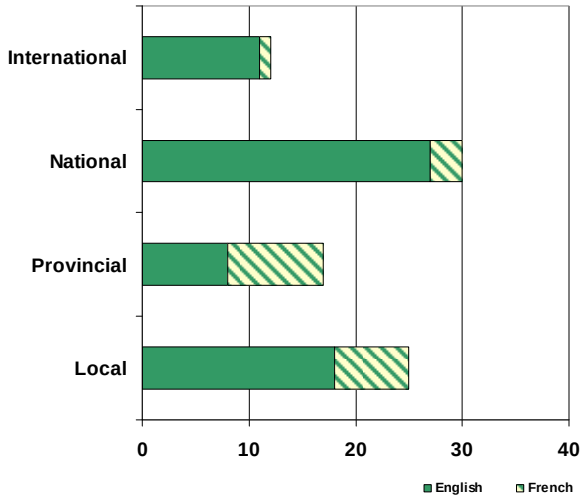
By amount of time spent on that sector

- The majority of journalists who report on health sciences and human and social sciences spend less than 20% of their time reporting on those subjects
- Writers who write about natural sciences and engineering (including environmental sciences) tend to spend more of their time focused on those subjects.

	10%	20%	30%	40%	>50%
Health sciences	17	12	7	5	8
Human and social sciences	15	12	5	2	5
Multidisciplinary	15	6	11	4	10
Natural sciences and engineering, including environmental sciences	19	7	9	7	16

- The overall impact is that there are a large number of journalists who are not able to focus on a particular subject area, and therefore may need more guidance and assistance in interpreting scientific information.

By jurisdiction of coverage



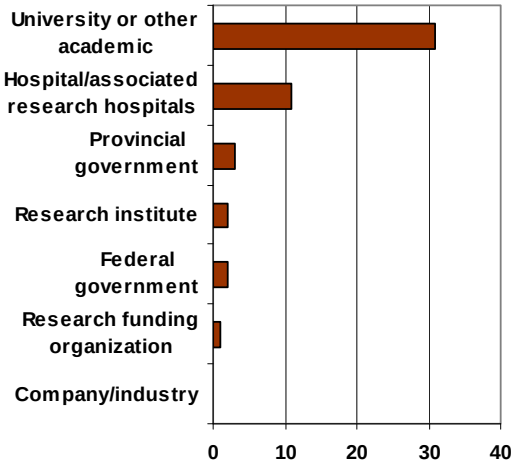
The majority (30 of 54) respondents to this question write for national publications

- 25 write for local publications
- 17 write for provincial publications
- 12 write for international publications

It is interesting to note that 9 of the 14 respondents to the French survey write for provincial publications and 7 write for local – only 3 write for publications that are national.

RESEARCH DIRECTORS AND ADMINISTRATORS

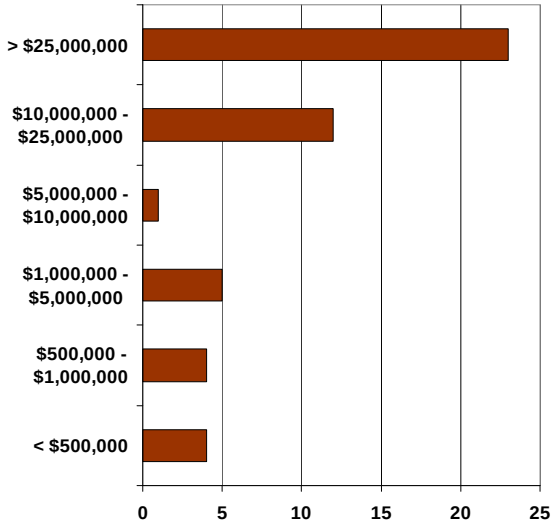
By types of research organization



As with researchers and press officers, the majority (31) of the 50 research directors/administrators who responded to this question are associated primarily with a university or academic institution.

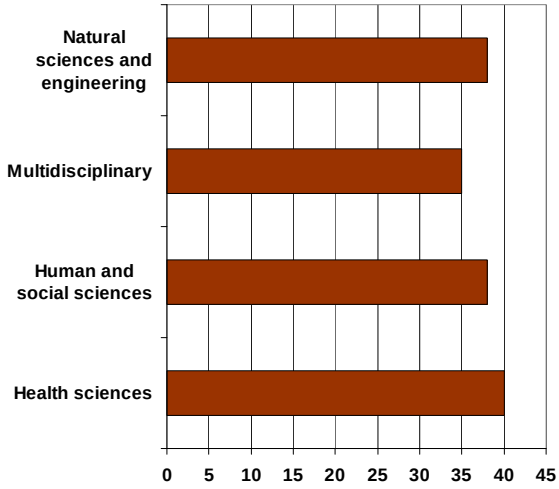
- This group makes up 62% of the total.
- The next largest group, at 22%, work for hospitals/research hospitals.

By annual science research funding



- 23 of the 49 research directors who responded work for organizations that attract in excess of $25,000,000 in research funding annually
- 12 receive between $10 and $25 million
- The remainder are spread fairly evenly among the smaller categories, with only 2 receiving less than $500,000 annually

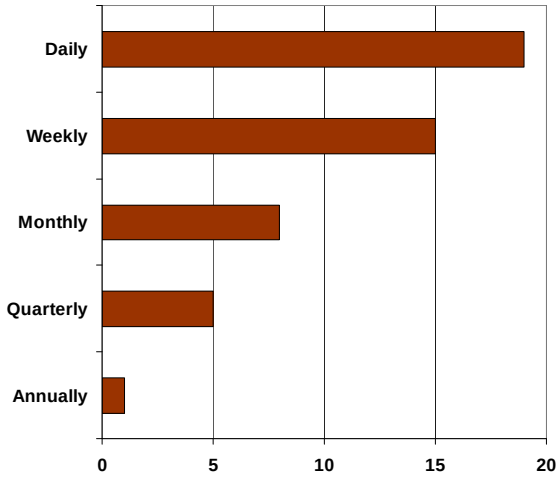
By research sectors



The research directors who responded manage research projects in all research sectors.

Similar to the response from researchers, health sciences has the most responses, followed closely by the other sectors.

By frequency of media inquiries

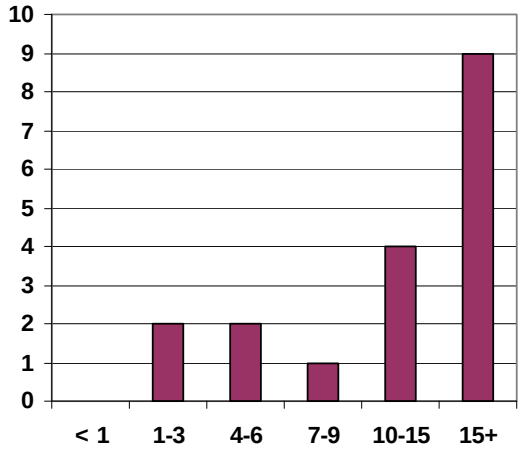


40% of the research directors indicate that their organizations respond to media inquiries on a daily basis.

This is in contrast, somewhat, to the response received from the press officers (although the question was asked differently in each case)

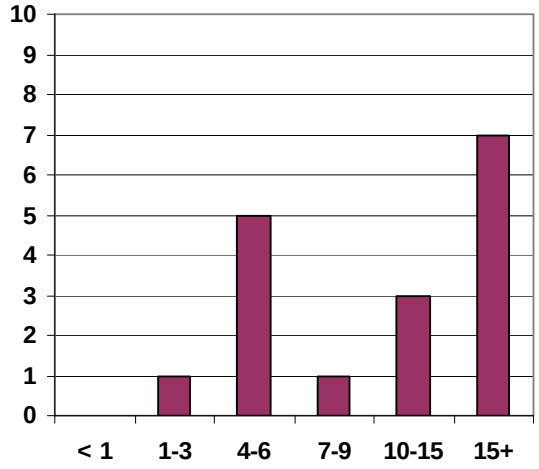
EDITORS

By years as professional editor



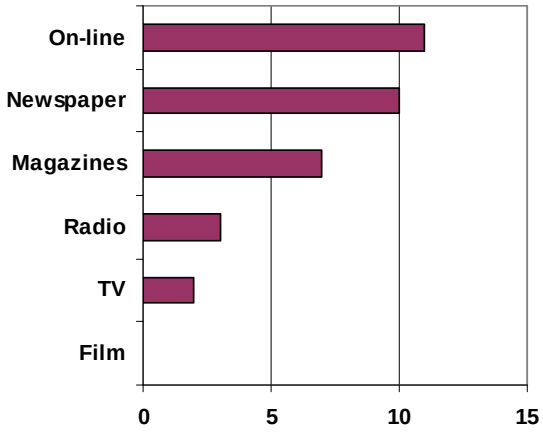
- 18 Editors completed this question.
- 9 editors have been professional editor/producer for more than 15 years.
- 4 have between 10 and 15 years of experience.
- The remaining 5 have less than 10 years experience

By years as science editor



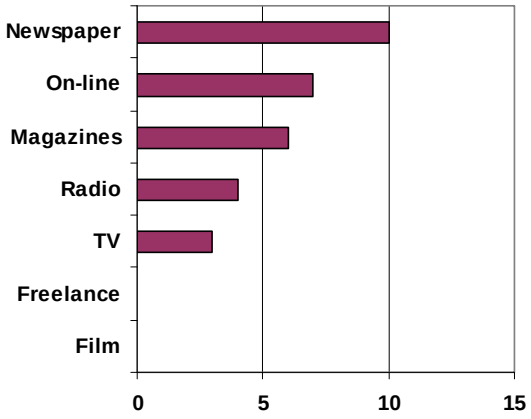
- 7 of the 17 editors who responded to this question have more than 15 years of experience editing/producing science based material
- 5 editors have between 4 and 6 years experience with science-based material

By types of media edited/produced



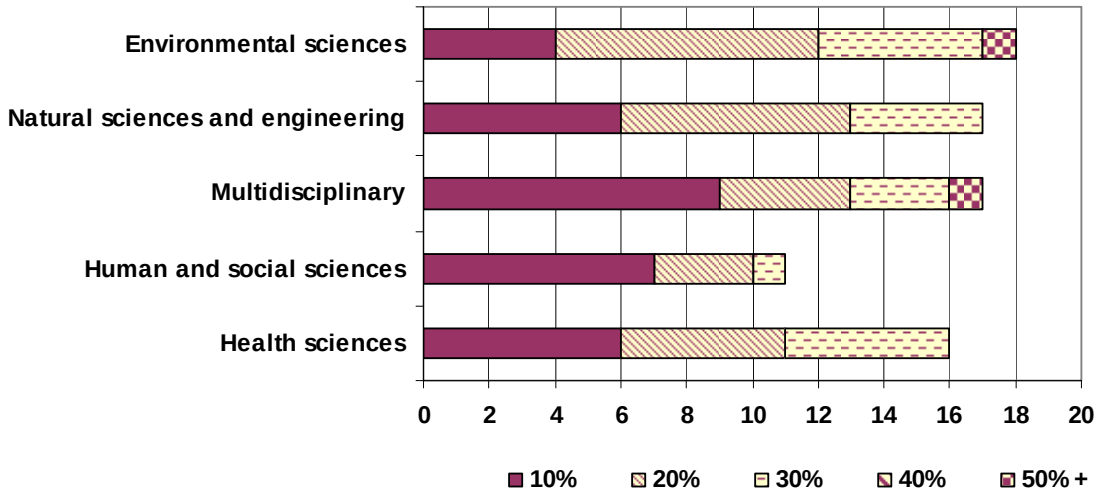
- In addition, respondents indicated they edited the following types of materials:
- take- away material: i.e., posters, handouts, etc
- interactive classroom programs
- Bulletin mensuel de nouvelles de culture scientifique et technique (Monthly newsletter of new scientific techniques and approaches)

By types of media organization they work for



- 10 of the 17 editors who responded work for newspapers
- 7 work for on-line publications and another 6 work for magazines
- The remaining 7 work for radio and TV

By research sectors reported on and amount of time spent on that sector by writers



By research sectors reported on

- A total of 19 editors responded to this question, indicating that their reporters write about the following:
- Natural Science and Engineering – 17
- Environmental Science – 18
- Multidisciplinary – 17
- Human and Social Sciences – 11
- Health Sciences – 16

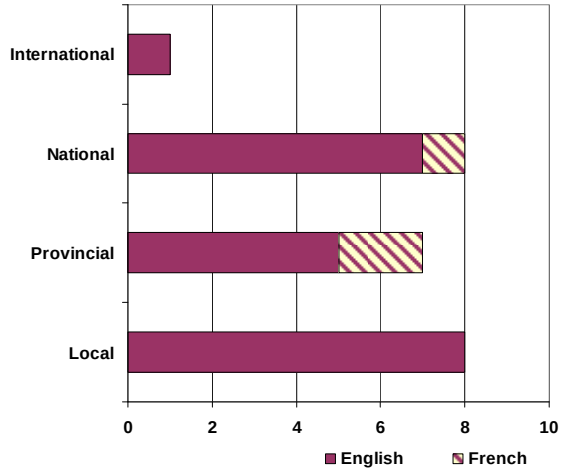
By amount of time reporters spend on that sector

- The majority of editors whose reporters write about health sciences are evenly spread across the range of 30% to 10% of their time focused in this area.
- Editors indicate that the majority of their writers who focus on human and social sciences spend 10% or less of their time reporting on those subjects
- Editors feel that their writers who write about natural sciences and engineering spend 20% or less of their time focused on those subjects.

	10%	20%	30%	40%	>50%
Health sciences	6	5	5	0	0
Human and social sciences	7	3	1	0	0
Multidisciplinary	9	4	3	0	1
Natural sciences and engineering	6	7	4	0	0
Environmental sciences	4	8	5	0	1

- The overall impact is that there are a large number of journalists who are not able to focus on a particular subject area, and therefore may need more guidance and assistance in interpreting scientific information.
- These numbers are somewhat different from what the writers themselves indicated above.

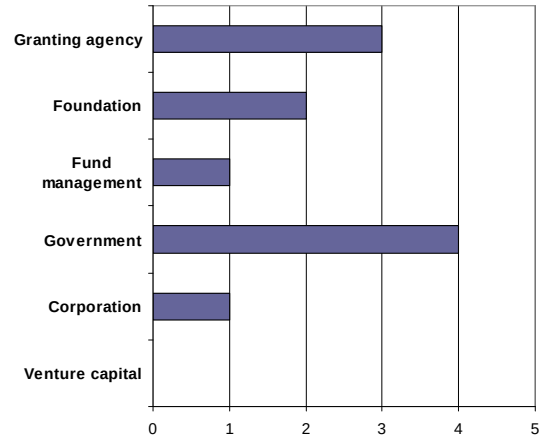
By jurisdiction of coverage



- 15 editors responded to the English version of this question and 2 responded to the French version.
- There is an even distribution of editors across local, provincial and national publications.
- Only one editor who responded works for a publication that is international in scope.

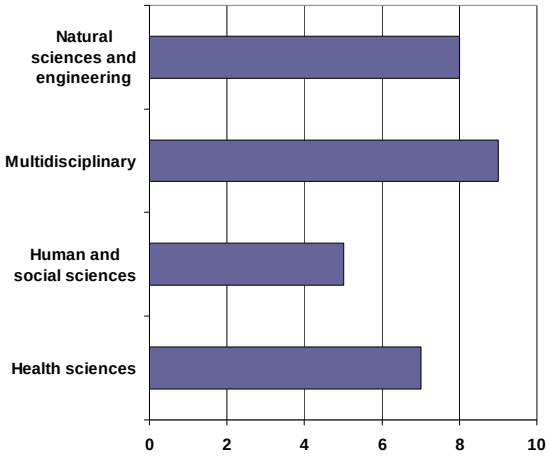
FUNDERS

By type of organization



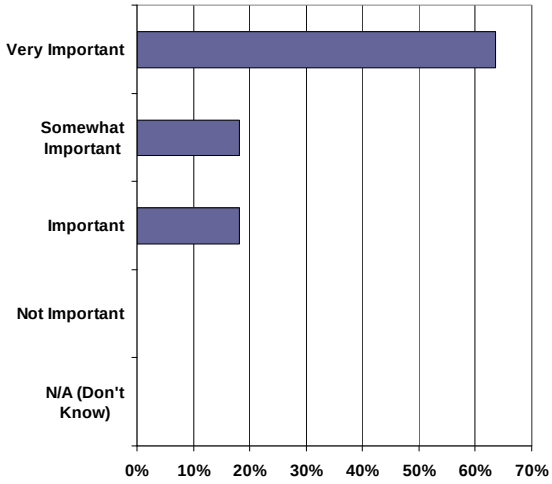
- Eleven funders responded to this question, representing a variety of organizational types; no venture capital funders responded

Types of Research Funded



- Together, the funders who responded to this question providing funding to all four research sectors.

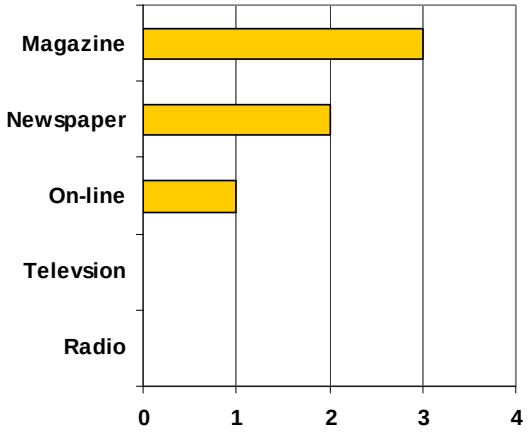
How important is it that projects funded receive media coverage?



- All of the funders agree that media coverage of projects that they fund is important, with the majority saying it is very important

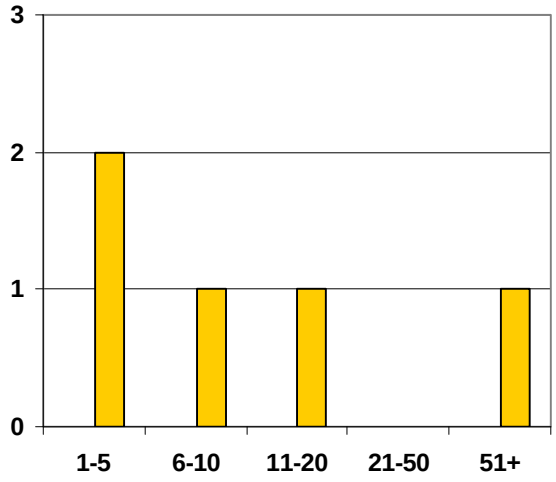
PUBLISHERS

By types of media published



- The response rate of publishers was very low which does not allow us to draw any real conclusions from the data.
- No television or radio publishers responded to the question.

By number of reporters



- The publishers who responded vary in the number of reporters that work for their organizations.
- Respondents represent small, medium and large organizations