

ISSP

INSTITUT DE RECHERCHE SUR LA SCIENCE,
LA SOCIÉTÉ ET LA POLITIQUE PUBLIQUE
INSTITUTE FOR SCIENCE, SOCIETY AND POLICY

Workshop Report
Science/Policy Interface

5

May 2014

Top 5 Management Incentives to Improve the Science/Policy Interface

*Workshop Results
Ottawa Science Policy Roundtable
May 8, 2014*

Michael Bordt and Marc Saner

University of Ottawa



uOttawa

issp.uottawa.ca

Note from the Series Editor

This workshop report, part of a series by the Institute for Science, Society and Policy (ISSP) at the University of Ottawa, is supported by a SSHRC Public Outreach grant (#604-2011-0007). The goal of the series is to mobilize academic research beyond the walls of universities. The series is directed at public servants operating at the science/policy interface in Canada and abroad. It has been designed to bring forth some themes and findings in academic studies for the purpose of synthesis, knowledge transfer and discussion. This report is the fifth in the series. The ISSP also carries out adjacent activities on the topics covered in these briefs. We hope they will be well received and are looking forward to any feedback you may have. You may reach me directly at msaner@uottawa.ca.

Marc Saner

Director, ISSP

Titles in this Series

- (1) (Policy Brief) Researchers are from Mars; Policymakers are from Venus: *Collaboration across the System* – by Matt Gaudreau and Marc Saner
- (2) (Policy Brief) From Many to One: *Integr*
- (3) *ation of Knowledge and Values in Decision Making* – by Matt Gaudreau and Marc Saner
- (4) (Policy Brief) Dealing with Not Knowing: *Evaluating and Communicating Uncertainty at the Science/Policy Interface* – by Matt Gaudreau, Michael Bordt and Marc Saner
- (5) (Workshop Backgrounder) Making it Work: *Improving the Interface Between Scientists and Policy Makers: Management Incentives* – by Sasha Kebo and Marc Saner
- (6) (Workshop Report) The Top Five Management Incentives for Improving the Interface Between Scientists and Policy Makers – by Michael Bordt and Marc Saner
- (7) (Policy Brief) A Map of the Interface between Science and Policy by Marc Saner (update of a Staff Paper, Council of Canadian Academies, 2007)
- (8) (Policy Brief) The Role And Responsibilities Of The Scientist In Public Policy by Bill Jarvis (republication of a Discussion Paper, Public Policy Forum, 1998; with permission of the Public Policy Forum and the Author)
- (9) (Policy Brief) A Question of Balance: *New Approaches for Science Based Regulations* (republication of a Policy Brief, Public Policy Forum, 1998; with permission of the Public Policy Forum and the Author)

Please visit www.issp.uottawa.ca for PDF versions of these documents.

About the Authors

Michael Bordt

Michael Bordt is currently a PhD student at the University of Ottawa, Department of Geography. He holds a Master's in Environmental Studies from York University and a BSc in Biology from Queen's University. After a long career with Statistics Canada and the Organization for Economic Cooperation and Development (OECD), he retired in 2012 to pursue his interests in ecosystem services and environmental accounting in an academic setting. While at Statistics Canada, he initiated and managed the interdepartmental project on Measuring Ecosystem Goods and Services (MEGS). As well, he participated in the development and implementation of the UN System for Environmental-Economic Accounting Experimental Ecosystem Accounting (SEEA-EEA) framework.

Marc Saner

Dr. Marc Saner is the inaugural Director of the Institute for Science, Society and Policy, and an Associate Professor in the University of Ottawa Department of Geography. Prior to this appointment, he served as Executive Director, Regulatory Governance Initiative, School of Public Policy and Administration, at Carleton University, and Director of Assessments and Executive Vice-President of the Council of Canadian Academies. Previously, Dr. Saner was a Director at the Institute on Governance where he built the Ethics and Risk Management Sector and co-managed the Technology and Governance Program. His primary interest has been multi-disciplinary work at the intersection of science, ethics and governance. He holds a PhD in applied ecology from the University of Basel, Switzerland (1991) as well as an MA in applied ethics from Carleton University (1999). Dr. Saner publishes in peer-reviewed journals in the areas of technology ethics, bioethics, risk management, biotechnology and ecology and has been invited to speak at seminars, workshops and international conferences around the world.

Acknowledgments

This series of briefs and workshop were funded under SSHRC grant #604 2011 007. Without this support, the series would not have been possible.

We thank Geoff Munro, former co-chair of the Assistant Deputy Minister Integration Board of the Government of Canada and Gary Corbett, President of the Professional Institute of the Public Service of Canada (the union representing scientists and other professionals) for providing letters of support for this project.

Our gratitude is extended to the workshop participants for their valuable insights: Rob Annan, Alin Charriere, Marian Chiu, Paul Dufour, Lori Engler-Todd, Patrick Fafard, Scott Findlay, Eric Gagné, Katie Gibbs, Peter Gogolek, Sasha Kebo, Sandra Lister, Sherri MacLeod, Margaret McCuaig-Johnston, Darren McKee, Karine Morin, Peter Morrison, An Ngo, Bob Slater, Pierre Therrien, and Moxi Zhang.

We also thank the attendees of the “Science Policy Nuts and Bolts” workshop at the 5th *Canadian Science Policy Conference 2013* (held in Toronto on November 20, 2013) for their insights.

© 2014, Institute for Science, Society and Policy, University of Ottawa

Available for download at www.issp.uottawa.ca



This work is licensed under a Creative Commons Attribution–NonCommercial–NoDerivs 3.0 Unported License.

To view this license, visit (www.creativecommons.org/licenses/by-nc-nd/3.0/).

For re-use or distribution, please include this copyright notice.



Top 5 Management Incentives to Improve the Science/Policy Interface

Introduction

This brief summarizes the result of a workshop held at the University of Ottawa on May 8, 2014 as part of the *Ottawa Science Policy Roundtable*. Additional results from a session at the *Science Policy Nuts and Bolts* workshop at the *5th Canadian Science Policy Conference 2013* (held in Toronto on November 20, 2013) are included in the Appendix.

The purpose of the workshop was to gather information from experienced practitioners on incentives that could be implemented or actions that could be taken to improve the science/policy interface. Issues identified in other reports in this series include communication, collaboration and common understanding. The Workshop Backgrounder (Brief #4 in this series, see page 2) provided three case studies and identified eight incentives for improving the interface, based on a review of academic literature.

Two main questions were posed at the workshop:

1. Where would you locate yourself with respect to the science/policy interface, and
2. From the list of the following eight incentives presented in the background paper, what are the top priorities (in terms of importance, urgency and feasibility)?
 - A. *Stimulate active and in-person sharing of reports and findings*
 - B. *Reward policy-makers for asking “better” questions*
 - C. *Encourage, identify, and cultivate champions*
 - D. *Establish science interpreters*
 - E. *Persuade social and natural scientists to work in tandem*
 - F. *Promote collaboration and in-house research*
 - G. *Identify value differences early and explicitly*
 - H. *Recognize the influence of workplace boundaries and structure*

The workshop provided an opportunity to prioritize these incentives, discuss their inter-relationships and to add new ones. The academic literature is rather void on this subject matter and nothing can replace hands-on experience. **Text Box 1** provides a summary of the results obtained from a discussion among 23 interested and experienced individuals.

Text Box 1: Answers: The Top 5 Incentives to Improve the Science/Policy Interface

1. *Stimulate active and in-person sharing of reports and findings*
2. *Demystify policy making for scientists (not in Workshop Backgrounder)*
3. *Encourage, identify, and cultivate champions*
4. *Identify value differences early and explicitly*
- 5a (tie). *Promote collaboration and in-house research*
- 5b (tie). *Recognize the influence of workplace boundaries and structure*

Workshop Approach

The workshop was attended by 22 individuals (plus one write-in response) and included graduate students, university professors, public servants ranging from junior to senior (representing seven federal departments and agencies) and two not-for-profit organizations. Participants were largely members of the ongoing informal *Ottawa Science Policy Roundtable*. Several non-members were invited specifically for the workshop.

In a first exercise, participants were asked to briefly describe their roles in the science/policy interface indicate their career start, trajectory and current place on the spectrum from science to policy and in terms of seniority in the organization.

In a second exercise, participants were divided into groups of three or four to deliberate on the eight incentives described in the Workshop Backgrounder and to suggest new ones. After a lively discussion, one participant from each group indicated on a summary chart the group's top three incentives and one incentive they would recommend against). Space was provided for comments and additional suggestions.

During a lunchtime discussion period, individual participants were invited to contribute individual priorities through a voting exercise using coloured dots.

Exercise 1: Career Pathways

Figure 1, below shows the results of the initial exercise of charting the career trajectories of participants relative to seniority and location on the spectrum from science to policy.

Yellow dots represented the start of the career while blue dots represented the current position in the career. The black lines represent the trajectory. The left side of the chart, or "Science" indicated that the participant worked mainly as a scientist. The right side of the chart, or "policy" indicated that the participant worked mainly in policy. In the middle, or "interface" indicated that the participant worked mainly at the interface between science and policy.

Participants started from a range of junior positions on the spectrum, but a majority started as junior scientists and several started from junior policy positions. Very few started in positions at the interface, emphasizing the fact that educational programs are generally not geared to produce graduates with a background in both science and policy. A majority of the current positions are either mid-level at the interface or more senior positions dealing more with policy than science.

The most common trajectory was from junior scientist to mid-level or senior positions at the science/policy interface.

Participants noted a gap in the membership (marked with a large question mark) in that there were no senior scientists represented. This could have been a selection bias in either the participation of the workshop or in the makeup of the Ottawa Science Policy Roundtable.

Figure 1 Career trajectories at the science/policy interface from beginning (yellow) to current (blue)



Exercise 2: Debating and Ranking Incentives

Figure 2 below, shows the results of the ranking of the eight incentives presented in the Workshop Backgrounder as well as four additional suggestions. Workshop attendees were instructed to consider importance, urgency and feasibility when deciding on priorities.

The large green dots indicate the top three incentives as judged by individual working groups. The large red dot indicates the one incentive the groups were recommending against. These “Group Scores” were provided as part of the rapporteurs’ summaries. The small green and red dots were placed by individuals during the subsequent lunch break resulting in “Individual Scores”. Like the working groups, each individual participant had three green and one red dots.

Dot voting was carried out on the 8 incentives provided in the Workshop Backgrounder (see page 5, above; Brief #4 in this series) and the following additional 4 items that were identified by the working groups at the workshop:

- I. Demystify policy making for scientists
- J. Accountability for use of evidence
- K. Gap analysis of current situation
- L. Need mandatory “incentive” for “interfaceiosity”

8 | IMPROVING THE SCIENCE/POLICY INTERFACE

Figure 2: Scoring on incentives from Workshop backgrounder (A-H) and new items proposed during the workshop (I-L)

Incentive	Group score	Individual score	Incentive	Group score	Individual score
A. Stimulate active and in-person sharing of reports and findings	●●●● ●	●●●●●	G. Identify value differences early and explicitly	●●	●●●●●
B. Reward policy-makers for asking “better” questions	●●●●	●●●●●	H. Recognize the influence of workplace boundaries and structure	●●●●●	●●●●
C. Encourage, identify, and cultivate champions	●●●●	●●●●●	I. Demystify policy making for scientists	●	●●●●●●●●
D. Establish science interpreters	●●●●	●●●●	J. Accountability for use of evidence	●	●●
E. Persuade social and natural scientists to work in tandem	●	●●	K. Gap analysis of current situation	●	●●
F. Promote collaboration and in-house research	●	●●●●●	L. Need mandatory “incentive” for “interfaceosity”	●	●

Comments on the incentives identified in the Workshop Backgrounder:

- There were overlaps in the incentives as proposed. That is, (E) *Persuade social and natural scientists to work in tandem* and (F) *Promote collaboration and in-house research* were seen to be both addressing slightly different issues in collaboration.
- There seemed to be a variety of interpretations of the various incentives, for example, a negative score attributed to (H) *Recognize the influence of workplace boundaries and structure* suggested that boundaries and structures should be breached rather than respected.
- Many of the incentives are stated in terms of improving the quality and supply evidence going into decision making. When viewed from the position of the decision maker, one could have a different set of issues. For example, what evidence does a decision maker need? One should separate the issues of quality of evidence from those of communicating it.
- Any incentive requires well-defined problem definition and the process of defining the problem in a way that can be informed by evidence needs to be iterative.

Observations and comments about the science/policy interface:

- It was noted that there are in fact a number of interfaces in the network including discovery science and science for surveillance and monitoring. Each of these could require different incentives (again linking back to issues in general of communication, collaboration and mutual understanding).
- Don't assume that improving the interface will result in better decisions. Evidence is only one input to decision making.
- The process should be informed by a model of decision making. Scientists need to understand how decisions are made.
- Identifying common goals between scientists and decision makers would better align policy with science (and vice versa). Incentives should focus on the intersection of public interest and political priorities.
- A discussion of incentives to improve the interface is assuming that collaboration is not optimal, yet there are no metrics (nor any incentive to produce metrics) to measure the effectiveness of the interface.
- Scientists need to have the rare capacity to synthesize findings, to understand the significance of the findings, to build a consensus among stakeholders, to communicate the findings and have the credibility and authority to have an impact.
- Getting collective agreement on the evidence can take as long as getting the evidence on the political agenda. This can sometimes be accelerated by a sense of urgency (e.g., an urgent problem that needs to be solved can galvanize collaboration).

Analysis: Identification of the Top 5

To arrive at an overall score for each incentive the group scores were taken as one and the individual scores were divided by three. Negative scores were subtracted from positive scores. For example, *(H) Recognize the influence of workplace boundaries and structure* received 2.5 positive group points, 1 negative group point and 3 positive individual points¹. This resulted in an overall score of 2.5 (+ 2.5 -1 + 3/3).

The following section presents the incentives in rank order. Suggestions identified at the workshop (and not included in the Workshop Backgrounder) are marked with an asterisk (*). All 12 incentives are included here, since those ranking lowest serve as a reminder that all the incentives discussed are largely context specific and, despite the case study examples in the literature, do not constitute magic bullets to improve decision making. Incentives that received equal scores were assigned the same rank.

¹ This included one point from an individual who could not attend in person. The individual also selected E and F and recommended against G. These are reflected in the final scores.

10 | IMPROVING THE SCIENCE/POLICY INTERFACE

Top 5 Incentives and Measures

Rank 1: Stimulate active and in-person sharing of reports and findings (Score = 5.17) (A, in the original list)

The incentive referred to sharing scientific reports and findings and therefore a new item was added to cover the reciprocal (**Rank 2: Demystify policy making for scientists**). It also includes the vulgarization (or popularisation) of scientific findings in language more appropriate for non-experts. Participants noted that sharing could also be conducted through informal networks. That is, meeting over coffee to discuss issues of common concern.

*** Rank 2: Demystify policy making for scientists (Score = 4.5) (I, new item)**

This was added in response to the implied one-way sharing of scientific reports and findings with decision makers (**Rank 1: Stimulate active and in-person sharing of reports and findings**).

Rank 3: Encourage, identify, and cultivate champions (Score = 3.17) (C, in the original list)

Participants noted that champions could be institutions (championing an issue between institutions) or individuals (championing an issue between groups within an organization).

Rank 4: Identify value differences early and explicitly (Score = 2.67) (G, in the original list)

This was seen as important to establishing common goals although it needs to be recognized that cultural differences (between organizations, groups, disciplines and individuals) will always remain.

Rank 5a (tie): Promote collaboration and in-house research (Score = 2.5) (F, in the original list)

This was seen to be overlapping substantially with **Rank 7: Persuade social and natural scientists to work in tandem**. A broader interpretation, though, is that it also refers to collaboration between policy makers and scientists.

Rank 5b (tie): Recognize the influence of workplace boundaries and structure (Score = 2.5) (H, in the original list)

Participants noted that it is not always possible to change boundaries. Information technology infrastructure can be used to increase access to information (e.g., a data catalogue is useful). Boundaries should be framed around decisions.

Lower-ranked Incentives and Measures

Rank 7a (tie): Persuade social and natural scientists to work in tandem (Score = 1.67) (E, in the original list)

This was largely viewed as overlapping with **Rank 5: Promote collaboration and in-house research**. That is, social and natural scientists working in tandem is one form of collaboration.

*** Rank 7b (tie): * Accountability in the use of evidence (Score = 1.67) (J, new item)**

The discussion centred around the need for a mechanism to audit what evidence was used in the ultimate decision. For example, if a decision maker chose to exclude consensus scientific evidence in making a decision, it should be made public what evidence was actually used.

*** Rank 7c (tie): * Gap analysis of current situation (Score = 1.67) (K, new item)**

A gap analysis was seen as a method to focus on what factors contributed to or detracted from the success of the science/policy interface.

*** Rank 10: *Need "mandatory" incentive for "interfaceiosity" (Score = 1.33) (L, new item)**

This was a general recommendation that, depending on the decision context, some degree of interfacing should be made mandatory.

Rank 11: Reward policy-makers for asking "better" questions (Score = 0) (B in the original list)

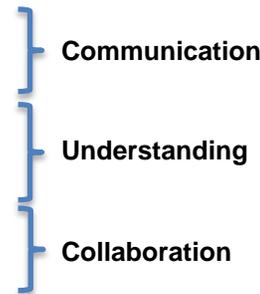
Participants suggested that discussions with policy makers should be iterative at various stages of the policy making proces. This would allow questions to be reframed to include when and whom.

Rank 12: Establish science interpreters (Score = -2.5) (D in the original list)

This was seen as a deterrent to improving the science/policy interface. That is, introducing a third player (the interpreter) lets scientists and decision makers "off the hook" for learning to work together. In the experience of the participants, interpreters are generally not helpful to identify the problem.

Interpretation: Improving the Science/Policy Interface

By far, the greatest priority (with respect to importance, urgency and feasibility) was assigned to incentives to establish two-way communication between scientists and policy makers (see 1 and 2, below). This was followed by processes aimed at improving mutual understanding beyond information sharing (see 3 and 4, below). The third-highest ranked group addresses issues of collaboration through recognizing, and perhaps breaching existing boundaries and structures between and within organizations (5a and 5b, below):

- 1: *Stimulate active and in-person sharing of reports and findings*
 - 2: *Demystify policy making for scientists*
 - 3: *Encourage, identify, and cultivate champions*
 - 4: *Identify value differences early and explicitly*
 - 5a: *Promote collaboration and in-house research*
 - 5b: *Recognize the influence of workplace boundaries & structure*
- 
- Communication**
- Understanding**
- Collaboration**

The priorities appear to be ranked in order of decreasing feasibility and increasing ambition. This should not be seen as favouring a linear, chronological model, that is, first establish communication, then mutual understanding, which will result in better collaboration. Participants emphasized the importance of overlaps, context specificity and iteration in regard to many of the incentives and the overall science/policy interface.

The extreme caution recommended for establishing interpreters (ranked #12, see above) was almost unanimous among the workshop participants. This is contrary to the concept of knowledge translators as specialists who can broker knowledge across a knowledge or communication gap (discussed in Brief #1 in this series).

The workshop results made it evident that the academic literature (on which this series of briefs, including the Workshop Backgrounder, are based) does not cover all situations and does not offer the degree of nuance necessary for applying these incentives in specific situations. Participants suggested most of the incentives were context-specific and subject to interpretation. Furthermore, some incentives mentioned in the literature have been tried and have failed in specific instances.

Our general recommendation is that users need to be conscious of the limitations of any specific incentive and how it might improve or detract from a given situation. We also suggest that users wishing to improve the science/policy interface consider these incentives as experimental. That is, neither the literature nor the experience from the workshop suggests that they are general best practices that are ready for formalization. Rather, they should be viewed as tools in a toolkit that are applied in specific contexts.

A user could address a given situation in terms of what the main barriers appear to be: communication, mutual understanding or collaboration. The incentives could then serve as a toolkit, selectively applied and evaluated at various stages of the process.

APPENDIX: ADDITIONAL RESULTS FROM A WORKSHOP HELD AT CSPC 2013

A workshop session on the same topic at the 5th *Canadian Science Policy Conference 2013* (held in Toronto on November 20, 2013) led to a lively debate and numerous suggestions for incentives to improve the science/policy interface. The session was part of the “Science Policy Nuts and Bolts” workshop and lasted one hour.

The session was facilitated by Marc Saner and attended by approximately 50 individuals resulting in 12 sets of written “top 3” suggestions. Since the methodology was entirely different, we decided avoid a direct comparison and to quote here a selection of statements instead (including a few verbal statements made during the plenary discussion; some of the statements below are paraphrased):

“It comes down to the personal motivation of each individual”

“Scientists need the intellectual curiosity to understand the process better”

“Scientists are citizens within society and have a responsibility to participate in policy making”

“The work environment should inform scientists of gaps in knowledge affecting society and science should provide information on what policies need to change”

“The institutions most provide recognition for the importance of such activities”

“We need to create a career path for such individuals”

“The topic itself could provide cool research opportunities”

“We need monetary incentives for scientists to engage in knowledge transfer activities”

“Grant money should be tied to outreach/communication/engagement success of effort”

“For young scientists, there are not many incentives in the current system”

14 | IMPROVING THE SCIENCE/POLICY INTERFACE

“Encourage more courses in universities across the fields”

“There should be short, concentrated courses for scientists on social and policy issues”

“Universities need to develop more experiential learning”

“There is a need for in-house science capacity”

“A seat at the table is necessary to improve each other’s position”

“We need a positive feedback loop between policy makers and scientists
- a ‘help us help you’ scenario”

“People inherently want to ‘nudge’ each other”

“A flat hierarchy will encourage activism”

“The real issue is not the science/policy interface, it’s the science/politics interface”

“Don’t use ‘incentives’, use ‘the stick’ instead”

The Institute for Science, Society and Policy

The Institute for Science, Society and Policy offers a unique, holistic approach to understanding the social implications of science and technology. We're interested in how to use these different perspectives to inform science and technology policy.

Centered at the University of Ottawa, the ISSP carries out research, teaching and public outreach on the relationship between society and science, innovation and technology.

Institute for Science, Society and Policy

Desmarais Building, 10th Floor
55 Laurier Ave. East
Ottawa ON Canada
K1N 6N5

Address inquiries and comments to:
issp@uottawa.ca



uOttawa

issp.uottawa.ca