

Active Engagement of Canadian Research Institutions Will Foster the Future of Knowledge Mobilization and Research Impact

Prepared for:

Social Sciences and Humanities Research Council
350 Albert Street
P.O. Box 1610
Ottawa, ON K1P 6G4

Prepared by:

Stephen MacGregor, Queen's University
David Phipps, York University
Cathy Malcolm Edwards, Carleton University
Jen Kyffin, University of Victoria
Virginie Portes, Université du Montréal

Contact:

Stephen MacGregor
stephen.macgregor@queensu.ca

David Phipps
dhipps@yorku.ca

Date:

October 19, 2020

Active Engagement of Canadian Research Institutions will Foster the Future of Knowledge Mobilization and Research Impact

COVID-19 is the most current and urgent research subject in 2020, and all related research must be connected to industry that can make new products, governments that can develop new public policies, and community/civil society organizations that can deliver new services to make a difference. However, the need to promote the instrumental and conceptual impacts of research evidence is not new. For over 20 years there has been mounting interest in research impact, referring to “the influence scholarly and creative inquiry has upon wider society, intended as well as unintended, immediate as well as protracted” (Federation for the Humanities and Social Sciences, 2017, p. 13). Efforts to progress research impact are known as knowledge mobilization (KMb). Regarding the social sciences and humanities, the Leiden statement provides an example of the importance of paying attention to KMb and research impact, describing the impaired global response to the 2014 Ebola outbreak due to a lack of “awareness of what, how and why people believe, behave and change” (“Leiden Statement,” 2014, p. 5). Mounting an effective response to current and future global challenges must begin with acknowledging and responding to their human dimension, which we contend can be accomplished through developments in KMb and research impact.

Much of the literature in KMb and research impact is focused either on: (a) the public policies driving research impact (e.g., Williams & Grant, 2018), or (b) moving research evidence from a project into its use by a downstream stakeholder and measuring that use (e.g., Budtz Pedersen, Grønvad, & Hvidtfeldt, 2020). Within this expanding literature base, one that now recognizes KMb as both a field of research and a professional practice, manifold knowledge gaps and problems of practice endure. An area particularly lacking attention concerns the roles and functions of research institutions. Research institutions are the link between what governments and funders want and what researchers and their partners can deliver, yet there are few examples of efforts to build institutional capacity for KMb and impact at scale. Even fewer examples exist of the successes and challenges of those capacity-building efforts. This paper makes an essential contribution to addressing this gap in present understanding by (a) drawing together relevant literature from the past and present of KMb and impact; (b) using this basis to outline the probable future directions for KMb and impact; (c) offering suggestions for how funders, institutions, and researchers can optimally position themselves in this future; and (d) presenting three case studies of Research Impact Canada member institutions that illustrate these suggestions within the frontline contexts of Canadian universities.

1. The Landscape for KMb and Impact: Where Have We Been?

Beyond the obvious impacts on scholarship, university research has always had the potential for positive (and sometimes negative) impacts on society, health, economy, environment, and culture. Exemplified by the US Land Grant Act of 1892, the Land Grant universities that were built as a function of this Act were designed to have an impact on state farmers and the agricultural industry (McDowell, 2003). More recently, in Canada, health researchers have had close to 25 years of funding to support efforts to translate health research into impacts for Canadians. This funder support began when the Government of Canada created the Canadian Health Services Research Foundation (now the Canadian Foundation for Healthcare Improvement) in 1986 with an explicit mandate to build the Canadian health system’s capacity

for knowledge transfer and exchange. The Canadian Institutes of Health Research (CIHR) was founded in 2000 with a legislated mandate in “the creation of new knowledge and its translation into improved health for Canadians.¹” Following CIHR, in 2006 the Social Sciences and Humanities Research Council of Canada (SSHRC) launched a renewed program architecture requiring every grant application to have a KMb strategy (i.e., a plan outlining anticipated impacts with the target audiences along with the efforts that will be made to achieve them). Over time SSHRC consolidated many programs into the Partnership Program to drive the impact of research on wider society. Alongside these sector-specific mandates, the Networks of Centres of Excellence were uniquely designed to create socioeconomic impacts from all branches of academic research. And more recently, the New Frontiers Research Fund will invest in programs of research designed to address a defined social, economic, environmental, or health challenge.

Many granting programs in other countries also require forms of impact strategy. Every National Science Foundation (US) grant application is assessed on intellectual merit and broader impacts, defined in part as, “Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?”² Until February 2020, UK Research & Innovation required a “pathways to impact” for grant applications. However, a fundamental distinction between the US, Canada, and the UK systems is the Research Excellence Framework (REF) in the UK, which is a system-wide effort to assess universities on the excellence and impact of their research. In the 2014 REF exercise, UK universities created 6,679 impact case studies describing the impact of research across 36 units of assessment in four broad categories: health, natural sciences and engineering, social sciences, arts and humanities. Following review by academic and non-academic peers, these case studies³ formed part of an institution’s score, which in part determined the institution’s share of £2B in operating grants. Similar research impact assessment systems have been adopted in Australia (Engagement and Impact Assessment⁴), the Netherlands (Standard Evaluation Protocol⁵), and New Zealand (Performance-Based Research Fund⁶).

Comparing the Canadian academic research enterprise with countries like the UK, New Zealand, Australia, and the Netherlands, Canadian researchers are focused on describing *how* to create impacts in grant applications. In contrast, researchers working in systems of impact assessment must also be concerned with describing *what* impacts have occurred. Understanding the relationship between how impacts are created and what impacts occur underpins the concept of research impact literacy, defined as the ability to “identify appropriate impact goals and indicators, critically appraise and optimise impact pathways, and reflect on the skills needed to tailor approaches across contexts” (Bayley & Phipps, 2019a, p. 3). Impact literacy weaves together past developments in the study of KMb into a concise framework recognizing that impact is influenced by actions and events not only at the level of individual researchers, but also at the levels of research institutions and the systems in which they are embedded (Bayley & Phipps, 2019b). Impact literacy is thus not simply about increasing the monitoring mechanisms

¹ <https://laws.justice.gc.ca/eng/acts/c-18.1/page-1.html>

² <https://www.nsf.gov/pubs/2007/nsf07046/nsf07046.jsp>

³ See Budtz Pedersen et al. (2020) for an in-depth discussion of the strengths and weaknesses of case studies as a method for assessing research impact, among other methods and models.

⁴ <https://www.arc.gov.au/engagement-and-impact-assessment>

⁵ <https://www.knaw.nl/nl/actueel/publicaties/standard-evaluation-protocol-2015-2021>

⁶ <https://www.tec.govt.nz/funding/funding-and-performance/funding/fund-finder/performance-based-research-fund/>

for impact; it is about developing the conditions (capacity) at both the individual and organizational levels to generate impact.

In view of impact literacy, research institutions are key stakeholders in both assessment-driven impact systems (i.e., universities are financially rewarded based, in part, on the impact of research) and mission-driven impact systems (i.e., impact is driven by researcher, institution, and funder goals). While most institutions have a technology transfer or commercialization office, scholars of KMb and impact have called for increased focus on institutional supports for developing non-commercial research impacts (e.g., impacts on practice and policy, society and culture, or the economy; Federation for the Humanities and Social Sciences, 2017). The institutional members of Research Impact Canada⁷ and Advancing Research Impact for Society⁸ in the US are leaders in responding to this call. The Research Impact Canada network is a community of practice of 20 universities (19 in Canada plus the University of Brighton, UK) that was founded in 2006 to build the KMb capacity of its members to support diverse KMb practices. While each Research Impact Canada member institution funds their own structures to support KMb and the development of impact literacy, many Canadian post-secondary institutions continue to grapple with a gap between KMb knowledge and KMb practice. As research institutions begin to develop their impact literacy, the need to underpin KMb practice with KMb research has become more acute, setting the stage for where we are now.

2. The Landscape for KMb and Impact: Where Are We Now?

Past developments concerning KMb and impact constitute the so-called “impact agenda.” At present, the impact agenda is characterized by considerable diversity of approaches to promoting, supporting, and assessing how research can achieve societal value (e.g., see Budtz Pedersen et al., 2020; Greenhalgh, Raftery, Hanney, & Glover, 2016; Hill, 2016). This diversity has meant that researchers, research institutions, and research partners increasingly require support for KMb and impact. While this support must ultimately come from multiple layers of research systems, research institutions “can and should lead the way as honest knowledge brokers” (Bogensneider, 2018, p. 14) who “mediate the translation of research results through key relationships” (Jessani et al., 2018, p. 501). This section explores the roles and structures of research institutions as brokers in the contemporary landscape for KMb and impact.

2.1. Institutional Roles in KMb

In Canada and abroad, the contemporary research institution is at once “the primary place of learning and scholarship [as well as] a service-provider competing within a complex commercial and knowledge landscape” (Williams & Grant, 2018, p. 93). It is increasingly expected that institutions espouse a commitment to society in organizational planning documents (e.g., mission statement, vision statement, strategic planning document) alongside demonstrable efforts to that end. As with any change, however, not all have welcomed the ongoing shift towards assessment-driven systems. Against growing pressures from governments and funders in the form of new policies and procedures, the modern university has been described as embroiled in “competition fetish and market logic” (Chubb & Watermeyer, 2017, p. 2369), what MacDonald (2017) characterized as a “neo-liberal, managerial audit culture” (p. 706). In plain terms, for many researchers and institutions, the impact agenda is considered an imposition on the research

⁷ www.researchimpact.ca

⁸ <https://www.researchinsociety.org/>

enterprise due to its restraining effect on academic freedom, promotion of audit culture, and advancement of managerial control. At the same time, some researchers suggest the impact agenda can be co-opted in support of “research that is politically engaged and directed towards social justice” (MacDonald, 2017, p. 701). How these divergent perspectives will unfold remains to be seen.

Despite the above-noted tension, for Canadian universities, there is significant interest in realizing the impacts of social sciences and humanities research. The U15, for instance, is a signatory on several Global Network statements⁹ that promote the potential of university research in solving global challenges. Two with special relevance here are the Hefei Statement and the Leiden Statement. The Hefei Statement deals with the characteristics of contemporary research universities, concluding “it is critical that all relevant policies [acting within or upon institutions] recognize the broad, pervasive and long-term benefits of university research and education and provide the support and environment that will ensure that these institutions continue to flourish” (“Hefei statement,” 2013, p. 3). In other words, universities play a key role in addressing local and global challenges, but that role can be constrained by policies espousing a short-term and instrumentalist view of university research, teaching, and broader KMb efforts. The Leiden Statement, on the other hand, deals with the role of the social sciences and humanities in global challenges. It describes how social sciences and humanities research can “help us understand what it means to be human in a complex world that is dynamic and multi-dimensional” (“Leiden Statement,” 2014, p. 3). Taken together, these statements position the social science and humanities in contemporary Canadian universities as crucibles for impacting society through high-quality research, teaching, and KMb. And this position applies to research-intensive and non-research-intensive universities alike, as even though the latter possess fewer research resources, they play an equally important role in promoting “a global citizenry educated in the humanities and social sciences” (“Leiden Statement,” 2014, p. 4). Indeed, only nine of 19 Canadian universities in Research Impact Canada¹⁰ are members of the U15, demonstrating the critical role of impact for all universities regardless of the size of their research portfolio.

Going beyond rhetoric that exemplifies a commitment to KMb or impact, the specific roles that research institutions can perform is a topic of active study. Many classification systems now exist for mapping the roles of individuals and organizations in mobilizing knowledge. At a general level, Campbell et al. (2017), drawing on the work of Best and Holmes (2010), describe three generations of models for KMb:

- “**Linear models** in which research is produced and then made available for users in a mainly one-way relationship;
- **Relationship models** (such as network and partnership models) that build on linear models but focus on enhancing relationships between and among researchers and practitioners to facilitate the development and mobilisation of research and practice connections;
- **Systems models** that move away from linear processes and involve a more complex process involving interaction, co-creation and implementation of evidence throughout all

⁹ The U15 is a group of 15 research-intensive Canadian universities, and the Global Network is an international group of networks of research-intensive universities (see <http://u15.ca/international>).

¹⁰ <http://researchimpact.ca/about-ric/#members>

levels of a system, plus identifying and addressing barriers to mobilising research and practice knowledge for evidence use.” (p. 212)

Despite the framing of “three generations,” which appears to suggest a general progression from linear to systems models, it is more accurate to view them as occurring in parallel and as building upon one another (Davies, Powell, & Nutley, 2015). For research institutions where myriad KMb efforts are underway at any given time, it remains likely that all three models are operating concurrently, with linear models reflecting traditional tech transfer or commercialization efforts, relationship models reflecting public engagement efforts, and systems models reflecting network building among research stakeholders. However, the three generations framing is apt in that linear models have received greater focus in the literature and in practice, followed by relationship models and systems models. Each “generation” reflects learning acquired over time and efforts to address limitations in earlier theories. Moreover, relationship and systems models for KMb are more inclusive of different forms of knowledge, or ways of knowing, as exemplified by developments in cross-cultural research such as with Indigenous communities. Recent scholarship is increasing focus on how to develop operational models, tools, and case examples of applying systems theory to KMb (Best & Holmes, 2010) in addition to complexity and network perspectives (e.g., Glegg, Jenkins, & Kothari, 2019; Kitson et al., 2018; Oliver & Faul, 2018). Returning to the framework of impact literacy, for instance, “advanced” is the designation used for individual practitioners of research impact who can “comprehend at a strategic and/or systems level” (Bayley & Phipps, 2019b, p. 4).

At a more specific level, the landscape of theories, frameworks, and models for roles and actions in KMb has mushroomed. Some commonly cited examples include Cooper’s (2014) brokering functions, Nutley, Walter, and Davies’s (2007) three models of research use, and Ward, House, and Hammer’s (2009) knowledge brokering framework. Many other examples exist, but it is at this point where the gulf between KMb theory and practice becomes apparent: “many of those working in knowledge mobilisation practice perceive the theoretical literature as distant from practice and too concerned with issues of terminology and theory” (Powell, Davies, & Nutley, 2017, p. 219). Powell et al. (2017) further state,

. . . there is the ironic situation that the field of knowledge mobilisation practice seems somewhat detached from its own knowledge base, with knowledge mobilisation activities often being developed and carried out without reference to the existing theory or to practical experience, and without the robust evaluations that could contribute to the knowledge base for the future.” (Powell et al., 2017, p. 217)

This issue led Davies et al. (2015) to conclude that one of the major needs for the future of KMb is more evaluation of KMb approaches, rather than further additions “to the existing confusing plethora of terms, models, and frameworks” (Powell, Davies, & Nutley, 2018, p. 46). To be clear, theoretical development in KMb remains important, but it cannot continue in absence of a strong empirical knowledge base that details what is working or failing to work in different practice contexts. Moreover, it is high-quality evaluations of KMb that are needed, which employ rigorous evaluative thinking to examine the assumptions of various models and frameworks, engage with the complex nature and challenges of KMb, and generate local learning that can inform generic learning for the broader field.

An ongoing evaluation of Research Impact Canada's efforts to develop the KMb capacity of its member institutions has investigated the roles held by individual members (see MacGregor & Phipps, 2020). A key finding was while the KMb roles of institutions are necessarily dynamic to their local issues and constraints, two broad categories were identifiable: (a) dissemination or transfer roles (i.e., communication and grant-support aspects of KMb), and (b) co-production or engagement roles (i.e., brokering and engagement aspects of KMb). Moreover, there was marked overlap in the endorsement of roles from each category (e.g., both research communications and knowledge broker), with members later specifying that they held multiple roles concurrently, drifted between roles over time, or altogether changed roles as institutional priorities shifted. In all cases, an identified need was more actionable KMb tools and resources as well as dedicated time for learning about KMb and engaging with others doing KMb.

The need for more capacity building in KMb has been echoed by studies that show it remains a peripheral concern for many Canadian researchers (Cooper, 2017; Cooper, Rodway, & Read, 2018; Fischman, Anderson, Tefera, Zuiker, 2018) and without robust institutional backing (Cooper, 2015; Sá, Faubert, Edelstein, & Qi, 2012; Sá, Li, & Faubert, 2011). An issue felt by researchers and institutional staff alike is that efforts under the banner of KMb or impact do not neatly group into one aspect of academic work (i.e., service, teaching, or research). Moreover, there is often little time for interactive KMb efforts; a lack of institutional resources; unrealistic expectations and work overload; short-term contracts for impact-related staff; limited professional support and development; and constraining reward, promotion, and career pathways (e.g., Knight & Lightowler, 2010; Knight & Lyall, 2013; Lightowler & Knight, 2013; Nyström, Karlun, Keller, & Gäre, 2018; van der Graaf, Shucksmith, Rushmer, Rhodes, & Welford, 2019; Wye et al., 2019). An important line of inquiry for future research will be how different actors holding different KMb roles within research institutions can work synergistically, overcoming constraints and building collective efficacy.

2.2. Institutional Structures and KMb Capacity

The impact agenda is also precipitating various opportunities and challenges for the contemporary research institution in terms of its structures for supporting KMb and impact. Drawing on the concept of "structural accretion," Fischman, Anderson, Tefera, and Zuiker (2018) note,

The development of universities can be characterized by increasingly more functions without either foregoing old ones or creating separate new institutional structures to support these functions. Such structural accretion generates disruptive demands on well-established traditions and university operations, challenging each institution to reengineer itself to survive. (p. 2)

The empirical basis for how institutions, experiencing increased functional demands on existing structures, can adapt and thrive in both mission-driven and assessment-driven impact systems is undergoing rapid development, though at present is still relatively nascent. Recent scholarship calls for empirical accounts of how KMb actually happens and of its organizational and structural dimensions (e.g., MacKillop, Quarmby, Downe, 2020).

Offering some general guidance, Cvitanovic, Löf, Norström, and Reed (2018) outline seven structural features of university-based boundary organizations (i.e., those focused on having impact at the research-policy-practice interface) that support KMb and impact:

1. **Organisational:** Organisations should have diverse teams, effective leadership, clear goals, a good culture, credibility, appropriate rewards systems.
2. **Individual:** Individuals need strong and diverse social networks, should be collaborative, open to new ways of doing things, resilient, self-motivated, honest and strong communicators.
3. **Financial:** Funding should be sufficient, secure, long-term, autonomous (i.e. managed internally) and flexible.
4. **Material:** Organisations should produce publically available policy briefs with recommendations and public summaries. They should also have an engaging website and utilise social media (e.g. twitter).
5. **Practical:** Organisations should provide employees with ‘time’ and ‘space’ to try new things, fail and learn; to think; and to pursue own interests.
6. **Political:** The interface between science, policy and practice will be most effective in situations where there is high political interest in a topic.
7. **Social:** Organisations need to ensure that employees have opportunities for informal face-to-face engagement with external stakeholders. (p. 8)

Although Cvitanovic et al. (2018) advise that their findings are to an extent localized to their specific context of a university project navigating the boundaries of marine research, policy, and practice, their overall features offer a useful starting point for thinking about the future. This starting point is salient given the aforementioned dearth of evaluations of KMb approaches. At the same time, much work remains in determining the applicability of Cvitanovic et al.’s (2018) findings in other contexts.

Providing a practice-informed perspective, Phipps, Jensen, Johnny, and Poetz (2016) describe six recommendations for building institutional KMb capacity, including (a) using planning tools to develop and continually refine institutional approaches to KMb, (b) investments into KMb in the form of economic and human capital; (c) advocating for and advancing the science of KMb; (d) collecting evidence impact, especially from non-academic partners; (e) developing repositories of impact case studies; and (f) building in time to adequately plan for KMb. Future work will need to expand on these general recommendations for institutional structures by exploring what works, for whom, and under what conditions. At the same time, pathways to impact are always “uncertain, iterative, contingent, and highly social” (Davies & Nutley, 2008, p. 6), meaning at all levels of research systems it will be important to distinguish between providing evidence-informed guidance and constraining the full constellation of possible KMb activities.

Another form of guidance for institutions looking to bolster their KMb capacity stems from the various taxonomies of professional competencies in non-commercial KMb and research impact (Bayley et al., 2018; Straus et al., 2011; Mallidou et al., 2018). These competency frameworks can inform efforts to build KMb capacity across individuals, teams, institutions, and systems. However, as these frameworks take the individual as the starting point for building KMb capacity (i.e., individual knowledge, skills, and attitudes), there remains a need for similar guidance at the organizational level. As Mallidou et al. (2018) note,

organizational competencies . . . are fundamental elements to successfully achieve KT [knowledge translation] activities . . . [but] little research has been conducted on KT

competencies at an organizational level and the identification of these competencies or organizational characteristics is certainly needed. (p. 11)

The recent work surrounding institutional impact literacy (Bayley & Phipps, 2019a, 2019b, 2019c) seeks to fill this gap.

Institutions interested in building their impact literacy can do so in five elements: commitment, clarity, connectivity, competencies, and co-production (Bayley & Phipps, 2019b). Institutions may be supportive of impact activities, they may be enabling impact activities, or those institutions with a high degree of impact literacy will be driving the impact activities of researchers. An institution can determine its degree of impact literacy using an institutional self-assessment tool that evaluates readiness to support impact along the five elements of institutional impact literacy (Bayley & Phipps, 2019c)¹¹. By requiring institutions to integrate quantitative and qualitative data sources, the self-assessment tool seeks to overcome a central limitation in evaluations related to KMb and impact: “‘count[ing] what can be easily measured’, rather than measuring what ‘counts’ in terms of significant, enduring changes” (Milat, Bauman, & Redman, 2015, p. 1). The utility of this tool is noteworthy considering the current paucity of publicly available resources for evaluating KMb (Penny Cooper & Associates, 2017). At the same time, it is important to see the tool as an early contribution towards ongoing global efforts to build an evidence base to support the development of impact literacy at the institutional level. The five elements of the tool have been developed from the theoretical and experiential knowledge of Drs. Bayley and Phipps, and so the framework remains to be thoroughly tested through empirical study.

Looking to the future, Cooper (2014) offers pertinent advice to research institutions seeking to build their impact literacy: “intermediaries [including research institutions] should seek to be evidence-based, both in the content they produce and in how they go about their work” (p. 51). The institutional members of Research Impact Canada are among the first in Canada that are starting to build KMb capacity based on KMb evidence.

3. The Landscape for KMb and Impact: Where Are We Going?

The Conference Board of Canada foresighted the emergence of impact beyond scholarly citations as an institutional priority in Canada in 2016. In *Beyond Citations*, they stated,

The default method of quantifying academic research output and impact has long been to utilize citation metrics, which focus on the total number of papers published, citations, and citations per author. Detractors argue, however, that citation metrics are not sophisticated enough to account for the social value of collaborative, cross-disciplinary research. (McKean & Robbins, 2016, p. 2)

They also identified KMb and research impact as one of six priorities for the future of Canada’s post-secondary education and skills sector (McKean & Howard, 2017).

The future of KMb and impact will link up many of the past and present contexts and are themselves mutually reinforcing. Research impact beyond citations is already a core component of many research funding programs and is a growing component of institutional rankings. This drives the need for impact literacy for researchers, institutions, and various other actors (e.g.,

¹¹ We note that Dr. Julie Bayley is commissioned by Emerald Publishing Group as an Impact Literacy advisor. Emerald produced the Impact Literacy and Institutional Health workbooks listed in the cited article.

peer reviewers, funding agencies), and since impact may be local and global, there will be an increasing internationalization of impact practice and scholarship that, along with dedicated KMb funding, will overcome the current gap between KMb research and KMb practice (see Table 1).

Table 1

Summary of the Past, Present, and Future of KMb and Impact

Past	Present	Future
Major focus in both practice and scholarship on linear models of KMb, such as technology transfer or commercialization offices	Recognition of the need for relational and systems models of KMb, but limited institutional support	Exploring the parallel and contingent operation of different models of KMb as impact becomes a core component of the research enterprise
Awareness that university research should have an impact on society	Proliferation of mission-driven and assessment-driven systems of impact	Evidence-informed KMb through individual and institutional capacity building for impact literacy
KMb theory disconnected from practice	Increasing connections between practitioners and scholars of KMb	Internationalization of impact practice and scholarship

3.1. Impact Will Be A Core Component of the Research Enterprise

Beyond KMb strategies (SSHRC) and knowledge translation strategies (CIHR), the recent New Frontier Research Fund is designed to create a lasting change for scholarship and/or society:

The objective of the Transformation stream is to support large-scale, Canadian-led interdisciplinary research projects that address a major challenge with the potential to realize real and lasting change. The challenge may be fundamental, leading to a scientific breakthrough, or applied, with a social, economic, environmental or health impact (SSHRC, 2020).

Interestingly, applications to this fund do not require a separate impact strategy. Descriptions of KMb and impact efforts must therefore be incorporated as part of the research proposal. This integration of impact and research demonstrates a maturing role of impact in grant applications and sets up impact as a core component of the research enterprise.

The future of KMb and impact will see the integration of impact into descriptions of research programs alongside a blurring of the boundaries between assessment-driven and mission-driven systems of impact, where governments provide incentives for impacts that are driven by institutional missions. These developments will, in turn, drive success in institutional rankings. The Times Higher Education (THE) rolled out the Impact Rankings¹² in 2019, ranking universities on their impacts towards the Sustainable Development Goals. Institutions are beginning to align efforts as impact assessment becomes part of national (e.g., the REF) and international (e.g., THE) rankings.

¹² <https://www.timeshighereducation.com/rankings/impact/2019>

As impact becomes a core component of the research enterprise, it will also be recognized in tenure and promotion (T&P). The local contexts of T&P review are critical to understanding, recognizing, and rewarding scholarship that reaches beyond academia (Lambert-Pennington 2016), yet Canadian T&P policies are inconsistent with regards to KMb efforts (Barreno et al., 2013). As academic institutions increasingly value KMb as means to compete in international impact rankings, T&P policies and their implementation at the departmental, faculty, and senate levels will need to evolve to reward these activities.

In the future, academic libraries will be key players in support of KMb. In 2017 the Canadian Association of Research Libraries released their Roadmap Towards Sustainable Scholarly Communication¹³. Recommendation 4 called for academic libraries to “promote the responsible application of impact and productivity measures for research.” This included not only measures of scholarly impact (i.e., bibliometrics), but also impacts of scholarship on society. Research Impact Canada members include several academic librarians who are sharing practices for making scholarship available to local communities, including York U Libraries working with community members in neighbouring Jane/Finch and UBC Libraries working with community members in the Downtown Eastside where the UBC Learning Exchange is located. Academic libraries are also promoters of Open Access to make scholarship accessible to wider audiences.

3.2. Individual and Institutional Capacity Building for Impact Literacy

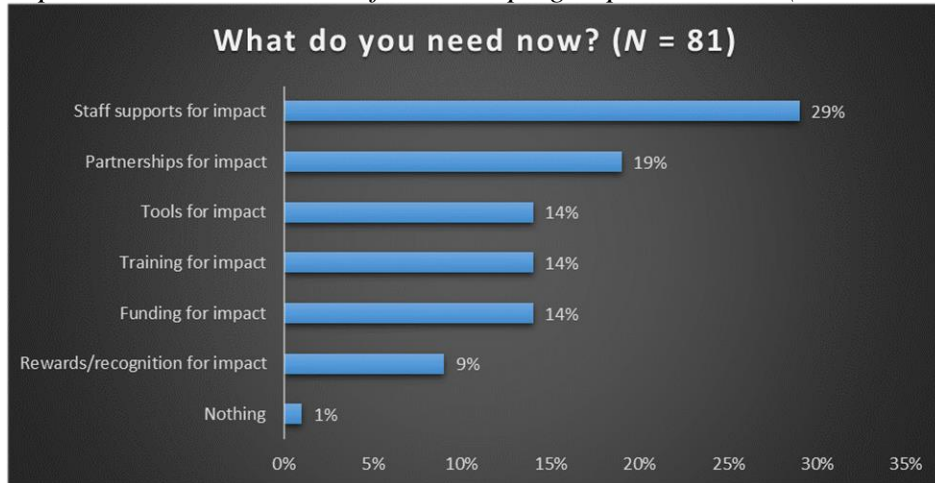
As institutions are driven towards impact through their missions, assessment exercises, and rankings, they will need to build their own institutional impact literacy as well as the impact literacy of faculty, students, and staff. The results of an informal poll of impact stakeholders (i.e., university faculty, staff and administrators) in Melbourne, Australia (February 2020) highlight how this need is observed internationally: of 81 respondents, 29% identified professional staff to support impact as the most important need to advance impact practice (Figure 1). Although this was an informal poll, and so the results should not be seen as directly generalizable, it identifies a need and sets the stage for more formal study to understand its characteristics, how it takes shape in various contexts, and how it might best be addressed. Indeed, staff supports are a feature of many elements of the Institutional Healthcheck Workbook (Bayley and Phipps, 2019c), including:

- Commitment #4: Is there dedicated support and advice available for impact?;
- Connectivity #6: Are these varied impact activities coordinated by a person/process?;
- Competencies #3: Is there expertise advice available for impact?; and
- Co-production #2: Does the organisation invest in support and services to facilitate engagement of non-academics for non-commercial reasons (e.g., public engagement). (pp. 7 – 18)

¹³ <https://www.carl-abrc.ca/news/scholarly-communications-roadmap/>

Figure 1

Impact Stakeholders' Needs for Developing Impact Practice (Melbourne, Australia)



There are many workshops and one-off capacity building sessions frequently delivered at conferences, but currently, there are few courses that build impact literacy. The Hospital for Sick Children's Learning Institute delivers two evidence-based courses in knowledge translation, including a two-day Specialist Knowledge Translation Training¹⁴ and a five-day Knowledge Translation Professional Certificate¹⁵ (KTPC). Some Research Impact Canada members have developed capacity building programs such as York's Mobilize YU¹⁶ and Guelph's Certificate in Knowledge Mobilization¹⁷. Together with the Memorial University of Newfoundland, the University of British Columbia, and the University of Winnipeg, they are developing a Canadian Curriculum for Kmb capacity building. This curriculum is based on scholarly- and practice-based evidence to help fill the gap between Kmb evidence and its use in practice.

There is already a robust evidence base exemplified by *What Works Now?* (Boaz, Davies, Fraser, & Nutley, 2019), an edited volume of 18 chapters by 30 authors writing about linking research evidence to its use in policy and practice. As scholars and practitioners link across fields of investigation and practice, such as implementation science, community engaged scholarship, and integrated knowledge translation, courses will become accredited (as KTPC is accredited by the University of Toronto School of Continuing Studies) and entire graduate programs will be created with both scholarly and practicum elements.

The question of accreditation for impact practitioners is open for debate. Delegates of the 2018 Canadian Knowledge Mobilization Forum overwhelmingly voted against the need for accreditation. However, the different levels of individual (aware, engaged, critical) and institutional (supportive, enabling, driving) literacy (Bayley & Phipps, 2019b)

¹⁴ <http://www.sickkids.ca/Learning/AbouttheInstitute/Programs/Knowledge-Translation/2-Day-Scientist-Knowledge-Translation-Training/index.html>

¹⁵ <http://www.sickkids.ca/Learning/AbouttheInstitute/Programs/Knowledge-Translation/5-Day-Knowledge-Translation-Professional-Certificate/index.html>

¹⁶ <https://innovationyork.ca/knowledge-mobilization/mobilize-yu/>

¹⁷ www.knowledgemobilization.ca

foreshadow that there may be an opportunity to establish standards of excellence at each level. Establishing standards of competencies will be a necessary precursor to accreditation should the impact community drive that decision.

Hiring impact literate staff (academic and non-academic) will contribute to building institutional impact literacy. As institutions pursue higher impact rankings, they will need to build their capacity to support impact. For example, impact is becoming a core element of Strategic Research Plans¹⁸, which will in turn drive investments in staff and capacity building for impact literacy. Tools such as Institutional Healthcheck Workbook are likely to be useful in this endeavour (Bayley & Phipps, 2019b), though future empirical study will continually refine what “capacity” looks like when it comes to supporting impact in different contexts and with different stakeholders.

3.3. Internationalization of Impact Practice and Scholarship

The 30 authors of *What Works Now?* come from eight countries. Researchers around the world are creating evidence on KMB and impact, but according to Powell et al. (2017), practitioners around the world are not using the evidence. This is possibly because impact researchers are not engaging impact practitioners to identify stakeholder needs. According to Bowen and Graham (2012), the failure to bridge the knowledge to action gap is not a failure of knowledge transfer but a failure of knowledge production. Researchers are not working on the problems that practitioners are facing. This, in turn, drives the lack of evidence use by practitioners. To overcome this hurdle, there will be more practice–scholarship collaborations, such as the collaboration between practitioners in Research Impact Canada and the RIPPLE program of research¹⁹ at Queen’s University that has resulted in this and one other publication (MacGregor and Phipps, 2020). And these collaborations will be increasingly international. Since 2016, funded by a Fellowship from the Association of Commonwealth Universities, impact practitioner (David Phipps, York University, Canada) and impact scholar (Julie Bayley, University of Lincoln, UK) have been collaborating on research impact literacy. They have been invited to present on the scholarship and tools arising from their collaboration in Canada, UK, US, Denmark, Belgium, Iran, Australia, and New Zealand. They co-chair a Research Impact and Stakeholder Engagement (RISE²⁰) Working Group under the auspices of the International Network of Research Management Societies (INORMS), which includes members from Canada, UK, US, Australia, New Zealand, Ghana, and Japan.

These individual collaborations are being replicated at the national level. Research Impact Canada is collaborating with the US-based Advancing Research Impact for Society²¹ network. Together they are developing a research impact and stakeholder engagement tool kit for the INORMS RISE working group and are planning a joint cross border impact conference in 2021.

Impact is not just a Canadian phenomenon. Researchers and practitioners of KMB and impact will increasingly collaborate internationally to establish international standards of excellence for

¹⁸ https://www.chairs-chaieres.gc.ca/program-programme/strategic_research_plan-plan_recherche_strategique-eng.aspx

¹⁹ <http://www.ripplenetwork.ca/>

²⁰ <https://inorms.net/activities/research-impact-and-stakeholder-engagement-working-group/>

²¹ <https://www.researchinsociety.org/>

individuals and institutions seeking to create impacts from research through KMb practices. Driven by international rankings such as THE Impact Rankings, the future of KMb will see the growth of impact literate practitioners and institutions dedicated to using investments in research to benefit society.

4. The Landscape for KMb and Impact: How are we going to get there?

The future of KMb and research impact will see impact become a core feature of the research enterprise, the building of individual and institutional impact literacy, and the internationalization of impact theory and assessment. But universities are operating on a business model that looks similar to early universities back to the University of Bologna in 1088. Universities are slow, if not resistant, to change. But they do respond to external and internal opportunities should they choose to move towards becoming a “permeable university,” a term coined by the University of Lincoln late in 2019²² to imagine a university that is open and responsive to local and global communities.

4.1. Call for Action #1: Funding for Impact

Universities respond well to calls for funding. In 1995, Natural Sciences and Engineering Research Council of Canada (NSERC) seeded the Intellectual Property Management program that made grants to VPs Research with the objective to support the growth of technology transfer and commercialization at Canadian universities. By 2008, the IPM program was also supported by SSHRC and CIHR. It funded 107 institutions which received or participated in 116 IPM grants totalling \$46.9M (Goss Gilroy Inc., 2008). The program was cancelled in 2009 after a review identified that it had accomplished its goals of establishing technology transfer and commercialization in Canada. Canadian universities need an analogous program to support development of KMb capacity across Canada. York University and the University of Victoria jointly received an IPM grant in the last IPM round in 2006. That funding allowed each to develop KMb supports, and collectively these two universities launched Research Impact Canada, still active 14 years later and now 20 university members. This need has been recognized by Universities Canada. In their 2020 Pre-Budget Submission, recommendation 3 called for the Government of Canada to “invest in a new knowledge mobilization fund to increase the impact of university research in driving Canada’s economic, climate and social priorities” (Universities Canada, 2019, p. 2). Eligible activities under a KMb fund would include the hiring and training of impact practitioners, costs of open access publishing, dissemination of scholarship in non-traditional formats, and engagement of researchers and students with research partners. Unlike the Research Support Fund which supports the indirect costs of research including KMb as one of many eligible activities²³, a targeted KMb fund would allow universities and colleges to propose specific KMb activities and to network those activities regionally, provincially, and nationally so that research produced at one university can benefit communities across Canada.

Such a fund would need to create the expectation that institutions eventually commit to fund the costs of KMb as core component of the research enterprise in the way every institution now has supports for commercialization and industry liaison, despite the IPM program ending in 2009. A

²² <https://staffnews.lincoln.ac.uk/2019/11/25/the-permeable-university-a-new-manifesto/>

²³ <https://www.rsf-fsr.gc.ca/administer-administrer/depenses-depenses-eng.aspx>

tool like the Institutional Healthcheck Workbook (Bayley & Phipps, 2019c) could be employed as a reporting tool for a KMb fund to assess an institution's impact literacy.

4.2. Call for Action #2: Recognize Knowledge Mobilization in Tenure and Promotion

Unlike funding, the call for KMb to be recognized in T&P must come from faculty and students. While Canadian T&P policies are inconsistent with respect to engaged scholarship, there are some exemplars for Canadian universities to follow. The University of Brighton has established standards of excellence for professors from entry level to Chair along four criteria: academic leadership, research, enterprise, and education. *Enterprise* embraces activities and accomplishments contributing to socioeconomic impacts. In Canada, Thompson Rivers University requires departments to use Boyer's scholarship categories: Discovery (research), Integration (synthesis), Application and Engagement (practice), and Teaching (learning) when assessing T&P files. Application and engagement (i.e., KMb and research impact) are eligible activities for T&P at Thompson Rivers University.

T&P policies are a function of collective bargaining and/or senate policies, and those policies are implemented at the department, faculty, and institutional levels. Researchers often observe how challenging it can be to build a T&P file on a career of engaged scholarship. While organizations like Community Campus Partnerships for Health provide tools for building an engaged scholarship T&P file²⁴, it is faculty members themselves who must drive the change in T&P. Faculty sit on senate, on T&P committees, and on collective bargaining teams. It is therefore up to faculty to establish the standards of excellence for engaged scholarship and then train T&P committees to evaluate against those standards of excellence.

4.3. Call for Action #3: Expectations of Granting Agencies.

Having funded the development of institutional impact literacy (call for action #1) and made it part of researchers' assessments (call for action #2), research granting agencies can close the loop for the research enterprise by requiring research institutions to support the development and implementation of KMb strategies in grant applications. Canada has a precedent for this requirement. NSERC Idea to Innovation ("I2I") grants²⁵ require the institution's technology transfer office (or equivalent) to help build, approve, and sign off on the commercialization strategy for the grant application. This concept could be extended as a desired but optional element to all NSERC, SSHRC, and CIHR grants and be a required element for large scale partnered research grants, where there is the expectation for researchers to create socioeconomic impacts from funded research. In addition, for those grant programs where impact is a required element, it would be beneficial to provide training to merit reviewers of grant applications to adequately review these components of the grant application.

Building institutional impact literacy, making KMb part of T&P, and requiring institutions to support it in grant applications will make KMb part of the research enterprise and facilitate the diverse impacts of research on health, economy, society, culture and environment. We conclude this paper with (a) an outline of leverage points for funders, institutions, and researchers in the calls for action (see Table 2); and (b) three case studies from Research Impact Canada member institutions that illustrate the emergent, complex, and dynamic nature of KMb and impact within

²⁴ <https://www.ccphealth.org/resources/the-community-engaged-scholarship-review-promotion-tenure-package/>

²⁵ https://www.nserc-crsng.gc.ca/OnlineServices-ServicesEnLigne/instructions/101/i2i_eng.asp

Canadian universities. Neither the leverage points for effecting change nor the practice-based realities of KMb can be reliably interpreted without the other.

Table 2

Leverage Points for Funders, Institutions, and Researchers in the Calls for Action

Calls for Action	Funders	Institutions	Researchers
#1	-Establish a funding program to support the development of KMb capacity across Canada, akin to the NSERC IPM program that ended in 2009, with the expectation that funding responsibility will eventually be transferred to research institutions	-Hire and train impact practitioners -Coordinate efforts around open access publishing -Develop supports for non-traditional research dissemination -Establish and promote programs for connecting researchers with local, national, and international partners -Make use of evidence-informed tools to assess individual and institutional impact literacy	-Advocate for the hiring and training of impact practitioners -Make use of the available KMb supports within institutions
#2	-Promote, through various funding programs, that excellence in scholarship is a multi-faceted construct captured by both traditional academic measures of excellence as well as measures that recognize KMb efforts	-Work with Senate and Unions to Develop best-practice guidelines that can be used by faculty during T&P review -Advocate for KMb as an important dimension of T&P	-Advocate at Senate, at faculty unions, in departmental T&P committees for an expanded perspective on the standards of excellence for engaged scholarship
#3	-Require research institutions to support the development and implementation of KMb strategies in grant applications, akin to what is done for the NSERC I2I program; funders train merit reviewers to review impact strategies	-Increase the supports offered to researchers for building KMb strategies, with the condition that support is encouraged for all grant applications, but required for large scale partnered research grants	-Make use of the available KMb supports within institutions -Value KMb equally to research plans in grant applications -Engage co-production partners early, even at the grant application stage

5. Case Studies of Bringing Together KMb Scholarship and Practice

5.1. Virginie Portes, Université de Montréal

The Personal Journey

After my PhD, I was hired by the Social Sciences and Humanities Research Council of Canada. Without knowing, I had fallen into the dark side of research: that of research administration. It was there that I first heard about KMb, a new term in granting agencies, in the early 2000s. Back in Montreal, I continued in research administration at UQAM and, since 2008, at the Office of Research at Université de Montréal. My expertise lies first and foremost in the financing of research in Canada, in various knowledge sectors.

Over time, I have become a specialist in the granting agencies (their rules, programs, etc.), in the preparation of applications (from the simplest to the most complex), all with the aim of helping professors at my university to pursue their research. After a few years, I found that certain types of research, especially in the social sciences and humanities, had few societal impacts that were immediate, instrumental, and easily measured. In my head, I imagined the CLASH (Centre de liaison avec les sciences humaines), whose goal would be to foster exchanges between the humanities in the broadest sense and community stakeholders. A kind of Living Lab specialized on certain themes. Being in an Office of Research, it was a bit far from my mandate, but the idea took off.

I took the only training offered in Quebec at the time, at the INRS, and opted to offer support and expertise in Knowledge Mobilization within the Office. This resulted in the hiring of a regular full-time professional whose mandate was to equip professors and colleagues with KMb tools; internal funds were secured to organize an annual funding competition for KMb projects, with over 40 projects funded since 2014. In addition, training workshops and a specific monitoring system have been set up. I also felt it was important not to work in isolation. That is why, after hearing presentations from the Research Impact Network Canada, I convinced the Director of Research to invest in the adventure. That was in 2014, and since then I have never regretted it: access to experts across Canada, sharing of tools and content, development of a unique model of inter-institutional collaboration.

The Institutional Journey

The Université de Montréal and the world: UdeM is a francophone university open to the planet, but also a university open to “its” world, the world around it. That is, the neighbourhoods in which it is located (Côtes-des-neiges, Outremont and Parc-Extension), the cities in which it is present (Montréal, Laval, St-Hyacinthe). The Université de Montréal also relies on a network of 9 affiliated hospitals. This network covers a spectrum of specialties, from neonatal to geriatrics, unparalleled in Quebec. The institution has always maintained privileged ties with the health network, and KMb in this sector is in its DNA.

At the same time, many UdeM professors in the sciences, humanities, and social sciences have pursued research programs with strong KMb components. One example is the Biodiversity Centre, which is located on one of Montreal's most beautiful sites, the Botanical Garden. Inaugurated in 2011, one of the Centre's mandates is to raise public awareness of major issues related to biodiversity, its conservation, and the importance of research in this field. The

Research, Discovery, Creation and Innovation Action Plan (2017-2021)²⁶, implemented by the Vice-Rector for Research, reaffirms the crucial role of the KMB: “Increase the impact of UdeM research and its contribution to society” is one of the five strategic orientations. While this vision includes policies for free access to scientific publications and data management, it goes beyond that. As mentioned, KMB support services for UdeM are integrated within the Office of Research. In 2019, the Vice-Rector for Research created INVENT, specifically dedicated to technosocial innovations, which is integrated into the structure of the Office of Research. This Centre is an original complement since it is located upstream, supporting the partners at each stage of their project, and downstream, up to the spin-off of new applications or the creation of companies. The ultimate goal is to accelerate, or even bring about, responsible social transformations. This combination constitutes an integrated effort to offer expertise in financing, co-construction, networking, and social entrepreneurship.

Bringing the calls for action to life

The recent pandemic caused by COVID-19 demonstrated without doubt the importance of scientific knowledge and the need for its rapid and effective transmission in society. KMB is not an easy task, it is an expertise in itself that must be cultivated, nurtured and cherished. At the university level, it is crucial to pursue efforts and to continue to provide institutional support and visibility. The new Université de Montréal’s rector has decided to move in that direction by creating a new vice-rectorate. In addition to being responsible for the international relations, the Vice-Rectorate of International Affairs and Community Partnerships is also responsible for establishing community partnerships ranging from local to international in scope. It is an important step in bringing the calls for action to life.

5.2. Cathy Malcolm Edwards, Carleton University

The Personal Journey

There is no doubt that we are living in complex times. Horst Rittel and Melvin Webber (1973) first socialized the idea of wicked problems in the context of social policy planning as a means to characterize an approach to sensemaking. Sensemaking is defined as a process or series of processes that people use to either give or make meaning from their collective experiences (Weick et al., 2005). For me, sensemaking makes the most “sense” through human-centred design.

Human-centred design is a creative mindset applied to problem solving that draws on the voices of many rather than the voice of one. It uses processes and tools that are based in deep empathy and solutions that are informed by the user experience. It uses methods that guide teams to select solutions that are desirable (wanted by the user), feasible (possible to do), and viable (just because we can, does it mean we should?) (IDEO, n.d.). It uses a mindset that values our individual paths and experiences while trying to make sense of them using processes that allow a group/collective to gain insight about a problem, use the insights to reframe the problem (i.e., create a hypothesis), prior to looking at solutions.

The challenge for a designer and broker alike is being a translator and interloper between the worlds of the individual and the collective; respect for plural viewpoints and experiences while

²⁶ https://laboinnovation.umontreal.ca/public/laboinnovation/documents/2017-2021_orientations_strategiques_recherche_UdeM.pdf

driving towards consensus for the common good. Both design and KMb are faced with a similar challenge; we must keep up with the times, and yet the current times are blazing an unprecedented, non-linear path.

Being a knowledge broker makes you a “sherpa of the unknown,” and effectively navigating the unknown requires vulnerability. We challenge ourselves and each other to put aside personal agendas and to become a part of something bigger. We do this because we believe that the connectedness between society, research, and impact is our collective path forward for social good.

The Institutional Journey

At Carleton University, KMb supports and services use both a central and decentralized approach. Carleton’s Office of Research Initiatives and Services (CORIS) has a central resource who works in partnership with faculty-based initiatives and facilitators to provide pre-grant support for strategy and planning. Carleton’s Faculty facilitators have extraordinary relationships with their researchers and research partners. This level of trust often means that the first point of contact from KMb planning happens with the Faculty Facilitator. Also, their extensive experience with the intricacies and nuances of research funders makes them an invaluable asset. Centrally, the CORIS resource has access to different approaches and tools through their involvement with Research Impact Canada network. The CORIS facilitator acts as a liaison/intermediary between the network and campus, sharing better practices, organizing learning opportunities, and acting as a KMb advisor on larger-scale opportunities.

On the post-award side of things, Carleton also has initiated an internal fund that supports researchers in contributing to the advancement and mobilization of knowledge to a wider knowledge user group, within and, more importantly, beyond academia. These grants are intended to support costs associated with the preparation of KMb activities for research projects.

Historically, Carleton’s KMb activities had been driven by a social innovation agenda. As such, the institution invested in training a KMb specialist as a human-centred design (HCD) practitioner. Human-centred design is an approach to problem solving that is rooted in empathy and lived experience, both of which are essential when tackling complex social issues facing the world today (e.g., poverty, housing, healthcare, the environment). HCD brings diverse groups of people and disciplines together, while engaging users and stakeholders through a lens of empathy. This has been particularly useful in brokering projects involving disadvantaged or marginalized groups. By taking into account the perspectives of academic and non-academic research participants, human-centred design further exemplifies co-produced pathways to impact as a viable framework for KMb.

Bringing the calls for action to life

As a university that was built by the community for the community, our relationship with community is vital. Universities often rely on the community around us to mobilize knowledge and to be impact partners so that the results of research are not lost in the academy. Yet, as stated above, this is an unprecedented, non-linear path and while that affords opportunity, it is often fraught with many unexpected challenges that require re-charting the course. Impact does not just happen. It requires a great deal of time, energy, and resources as well as agility; this all

equates to resources. For a lot of our community partners as well as our academic researchers, there is no more capacity to draw on. We are in danger of creating a burdensome pathway that does not set up any one organization for success. By investing in regional impact practitioners, local post-secondary institutions could realize their desire to create positive change without placing the onus on community organizations to figure out how to create impact with ever-decreasing capacities. This would also leverage a cooperative space that would call on institutions to work together for socioeconomic benefit.

5.3. Jen Kyffin, University of Victoria

The Personal Journey

In a landscape of increasingly complex models of KMb, the Co-produced Pathway to Impact first introduced by Phipps, Cummings, Pepler, Craig, and Cardinal (2016) offers an elegant conceptualization of the iterative engagement between non-academic partners and academic researchers progressing together toward impact. Central to this model is the overlapping multi-stakeholder contexts that MacGregor (2019) refers to as ‘brokering space’ in which KMb professionals seek to activate co-production across different stages, contexts, and systems of the research to impact pathway. What follows is a brief outline of a few key brokering strategies along the co-production pathway.

The complex and nuanced social contexts of community-campus research are well suited to an integrated approach whereby a KMb practitioner tailors a variety of activities to support the partnership from development to post-project completion. Partnership development involves proactively reaching out to campus and external communities to identify prospective opportunities for research collaboration as well as responding to incoming requests to address real-world challenges through research partnerships.

The resulting collaborations are frequently interdisciplinary and multi-sectoral: engineers and ecologists work together with schools and Indigenous organizations to develop sustainable stormwater management systems in community learning environments or scholars from fine arts and economics join with intercultural and social innovation organizations to tackle employment challenges among artisan newcomers. While the duration, frequency, and intensity of partnership support varies according to partners’ needs, each requires relational skills that foster trust, equity, and shared understanding among individuals and organizations representing diverse backgrounds, positionalities, and worldviews.

Knowing what engagement activities to use and how best to use them requires a genuine understanding of the contexts in which partners are situated. A variety of engagement activities—planning sessions, workshops, webinars, and networking events may be used in combination with tailored communication and translation tools. For example, focussed project planning sessions may drive the co-creation of a detailed partnership agreement to capture the proposed research to impact pathway, whereas less traditional methods, including design thinking, ideation grids, and infographics, may have better uptake and applicability in networking and scoping contexts.

The Institutional Journey

The University of Victoria's (UVic) vision is to “integrate outstanding scholarship, engaged learning, and real-life involvement to contribute to a better future for people and the planet.” A commitment to partnerships with community is integral to this vision and is woven into all six priorities of the UVic Strategic Framework²⁷. Community engagement is activated by central and decentralized institutional structures that focus on five key areas: Community-Engaged Research, Community Relations, Engaged Learning, Global Relations and Knowledge Mobilization. I next briefly describe one institutional structure dedicated to mobilizing knowledge for impact.

Located in the Vice-President Research portfolio, the Research Partnerships and Knowledge Mobilization office (RPKM) was established to broaden partnership support to include both commercial and non-commercial research initiatives. Formerly a tech-transfer unit, RPKM now works with all UVic faculties, many of the university's service units, and with a rich complement of external partners, including not only industry, but also local and provincial governments, health authorities and foundations, and organizations that serve Indigenous peoples, people with disabilities, mental health and/or addictions, seniors, vulnerable youth, women, and members of the LGBTQ2 and racialized communities. The collaborations contribute to the university's institutional strategy for community-university engagement. We provide hands-on tools and training for KMB to students, staff, and faculty. Moreover, through our role in the development of the university's institutional strategy for community-university engagement, we play an important role in building capacity for research impact.

A small team within the unit manages non-commercial partnerships. Similar to the Help Desk model first developed by CUPP at the University of Brighton (Hart, Northmore, Gerhardt, & Rodriguez, 2009), the Community Partnerships team (CP) provides the first point of contact for researchers, students, and community organizations interested in collaborative research and KMB initiatives. Requests for help to develop project ideas, connect with expertise, or identify funding can be made in person or through an online portal. Depending on the nature of the request, CP either responds directly or works with another service unit on campus. For example, requests for course-based activities are supported by a community-engaged learning coordinator, whereas requests for service learning placements are referred to a co-op or practicum coordinator. Received requests and ideas for research projects are further explored and promoted to connect the right people to work together from development to impact. The CP team may be involved across the life of the partnership or at select points throughout the research process, depending on the needs of the co-production partners.

Bringing the calls for action to life

Funding for impact underscores the value of collaborative research and the relevance of higher education institutions in solving global challenges. Now, more than ever, as we endeavor to meet the challenges of research in a post-COVID world, funding structures must lead the way in shaping and supporting innovative opportunities to integrate community, industry, government and the academy in co-producing impact for the benefit of society.

²⁷ <https://www.uvic.ca/strategicframework/index.php>

Researchers and their non-academic partners require consistent institutional supports—specialized staff units that span and connect boundaries—working with and across disciplines and public sectors to facilitate and activate the co-production of research for impact. The resulting multi-disciplinary and multi-sectoral partnerships can best leverage the full complement of diverse expertise required to tackle emerging local, national and global priorities. Finally, impact measures must move beyond traditional metrics and instead be derived from, applied to and evaluated within the diverse community and societal contexts for which their benefits are intended.

Acknowledgements

We would like to thank the knowledge mobilization practitioners and scholars as well as SSHRC staff who reviewed and provided feedback on early drafts of this report.

References

- Barreno, L. Elliott, P.W. Madueke, I. and Sarny, D. (2013). *Community-engaged scholarship and faculty assessment: A review of Canadian practices*.
<http://engagedscholarship.ca/res/community-engaged-scholarship-and-faculty-assessment-a-review-of-canadian-practices/>
- Bayley, J. E., & Phipps, D. (2019a). Building the concept of research impact literacy. *Evidence & Policy*, 15(4), 597–606. <https://doi.org/10.1332/174426417X15034894876108>
- Bayley, J. E., & Phipps, D. (2019b). Extending the concept of research impact literacy: Levels of literacy, institutional role and ethical considerations [version 2; peer review: 2 approved]. *Emerald Open Research*, 1(14). <https://doi.org/10.35241/emeraldopenres.13140.2>
- Bayley, J. E., & Phipps, D. (2019c). *Institutional impact health workbook*. Bingley, United Kingdom: Emerald Publishing.
<https://resources.researchimpact.ca/resources/institutional-healthcheck-workbook/>
- Bayley, J. E., Phipps, D., Batac, M., & Stevens, E. (2018). Development of a framework for knowledge mobilisation and impact competencies. *Evidence & Policy*, 14(4), 725–738. <https://doi.org/10.1332/174426417X14945838375124>
- Belkhdja, O., Amara, N., Landry, R., & Ouimet, M. (2007). The extent and organizational determinants of research utilization in Canadian health services organizations. *Science Communication*, 28(3), 377–417. <https://doi.org/10.1177/1075547006298486>
- Best, A., & Holmes, B. (2010). Systems thinking, knowledge and action: Towards better models and methods. *Evidence & Policy*, 6(2), 145–159. <https://doi.org/10.1332/174426410X502284>
- Boaz, A., Davies, H., Fraser, A., & Nutley, S. (Eds.). (2019). *What works now? Evidence-informed policy and practice*. Bristol, UK: Policy Press.
- Bogensneider, K. (2018). Positioning universities as honest knowledge brokers: Best practices for communicating research to policymakers. *Family Relations*, 1–16. <https://doi.org/10.1111/fare.12339>
- Boswell, C., & Smith, K. (2017). Rethinking policy ‘impact’: Four models of research-policy relations. *Palgrave Communications*, 3(1), 1–10. <https://doi.org/10.1057/s41599-017-0042-z>
- Bowen, S. J. & Graham, I. D. (2012). From knowledge translation to engaged scholarship: Promoting research relevance and utilization. *Archives of Physical Medicine and Rehabilitation*, 94(1), S3–S8. <https://doi.org/10.1016/j.apmr.2012.04.037>
- Budtz Pedersen, D., Grønvd, J., & Hvidtfeldt, R. (2020). Methods for mapping the impact of social sciences and humanities. *Research Evaluation*, 29(1), 4–21. <https://doi.org/10.1093/reseval/rvz033>
- Campbell, C., Pollock, K., Briscoe, P., Carr-Harris, S., & Tutters, S. (2017). Developing a knowledge network for applied education research to mobilise evidence in and for educational practice. *Educational Research*, 59(2), 209–227. <https://doi.org/10.1080/00131881.2017.1310364>

- Chubb, J., & Watermeyer, R. (2017). Artifice or integrity in the marketization of research impact? Investigating the moral economy of (pathways to) impact statements within research funding proposals in the UK and Australia. *Studies in Higher Education*, 42(12), 2360–2372. <https://doi.org/10.1080/03075079.2016.1144182>
- Cooper, A. (2014). Knowledge mobilisation in education across Canada: A cross-case analysis of 44 research brokering organizations. *Evidence & Policy*, 10, 29–59. <https://doi.org/10.1332/174426413X662806>
- Cooper, A. (2015). A tool to assess and compare knowledge mobilization efforts of faculties of education, research brokering organizations, ministries of education, and school districts. *Brock Education Journal*, 25(1), 5–18. <https://doi.org/10.26522/brocked.v25i1.441>
- Cooper, A. (2017). How are educational researchers interacting with end-users to increase impact? *Engaged Scholar Journal*, 3(2), 99–122. <https://doi.org/10.15402/esj.v3i2.335>
- Cooper, A., Rodway, J., & Read, R. (2018). Knowledge mobilization practices of educational researchers across Canada. *Canadian Journal of Higher Education*, 48(1), 1–21. <http://journals.sfu.ca/cjhe/index.php/cjhe>
- Cvitanovic, C., Löf, M. F., Norström, A. V., & Reed, M. S. (2018). Building university-based boundary organisations that facilitate impacts on environmental policy and practice. *Plos One*, 13(9), e0203752. <https://doi.org/10.1371/journal.pone.0203752>
- Davies, H. T., Powell, A. E., & Nutley, S. M. (2015). Mobilising knowledge to improve UK health care: learning from other countries and other sectors – A multimethod mapping study. *Health Services and Delivery Research*, 3(27), 1–190. <https://doi.org/10.3310/hsdr03270>
- Edwards, D. M., & Meagher, L. R. (2019). A framework to evaluate the impacts of research on policy and practice: A forestry pilot study. *Forest Policy and Economics*. Advance online publication. <https://doi.org/10.1016/j.forpol.2019.101975>
- Federation for the Humanities and Social Sciences. (2017). Approaches to assessing impacts in the humanities and social sciences. Ottawa, ON: Federation for the Humanities and Social Sciences. www.ideas-idees.ca
- Fischman, G. E., Anderson, K. T., Tefera, A. A., & Zuiker, S. J. (2018). If mobilizing educational research is the answer, who can afford to ask the question? An analysis of faculty perspectives on knowledge mobilization for scholarship in education. *AERA Open*, 4(1), 1–17. <https://doi.org/10.1177/2332858417750133>
- Glegg, S. M. N., Jenkins, E., & Kothari, A. (2019). How the study of networks informs knowledge translation and implementation: A scoping review. *Implementation Science*, 14, 1–27. <https://doi.org/10.1186/s13012-019-0879-1>
- Goss Gilroy Inc. (2008). *Evaluation of the Intellectual Property Mobilization Program: Final evaluation report*. https://www.nserc-crsng.gc.ca/NSERC-CRSNG/Reports-Rapports/evaluations-evaluations_eng.asp
- Greenhalgh, T., Raftery, J., Hanney, S., & Glover, M. (2016). Research impact: A narrative review. *BMC Medicine*, 14(78), 1–16. <https://doi.org/10.1186/s12916-016-0620-8>
- Hart, A., Northmore, S., Gerhardt, C., & Rodriguez, P. (2009). Developing access between universities and local community groups: A university helpdesk in action. *Journal of Higher Education Outreach and Engagement*, 13(3), 45–59. <https://openjournals.libs.uga.edu/jheoe/article/view/459/459>
- Hill, S. (2016). Assessing (for) impact: Future assessment of the societal impact of research. *Palgrave Communications*, 2, 1–7. <https://doi.org/10.1057/palcomms.2016.73>

- IDEO. (n.d.). *Design Thinking frequently asked questions*. Retrieved September 25, 2019, from <https://designthinking.ideo.com/faq/whats-the-difference-between-human-centered-design-and-design-thinking>
- Inge, S. (2020) Exclusive: UKRI to scrap impact sections from grant applications. *Research Professional News*. <https://www.researchprofessionalnews.com/rr-news-uk-research-councils-2020-1-exclusive-ukri-to-scrap-impact-sections-from-grant-applications/>
- Jessani, N. S., Babcock, C., Siddiqi, S., Davey-Rothwell, M., Ho, S., & Holtgrave, D. R. (2018). Relationships between public health faculty and decision makers at four governmental levels: A social network analysis. *Evidence & Policy*, 14(3), 499–522. <https://doi.org/10.1332/174426418X15230282334424>
- King's College London and Digital Science. (2015). *The nature, scale and beneficiaries of research impact: An initial analysis of Research Excellence Framework (REF) 2014 impact case studies*. <http://www.kcl.ac.uk/sspp/policy-institute/publications/Analysis-of-REF-impact.pdf>
- Kitson, A., Brook, A., Harvey, G., Jordan, Z., Marshall, R., O'Shea, R., & Wilson, D. (2018). Using complexity and network concepts to inform healthcare knowledge translation. *International Journal of Health Policy and Management*, 7(3), 231–243. <https://doi.org/10.15171/ijhpm.2017.79>
- Knight, C., & Lightowler, C. (2010). Reflections of “knowledge exchange professionals” in the social sciences: Emerging opportunities and challenges for university-based knowledge brokers. *Evidence & Policy*, 6(4), 543–556. <https://doi.org/10.1332/174426410X535891>
- Knight, C., & Lyall, C. (2013). Knowledge brokers: The role of intermediaries in producing research impact. *Evidence & Policy*, 9(3), 309–316. <https://doi.org/10.1332/174426413X14809298820296>
- Lambert-Pennington, K. (2016). Promoting engaged scholars: Matching tenure policy and scholarly practice. *Metropolitan Universities*, 27(2), 50–58 <https://doi.org/10.18060/21126>
- Leiden statement: The role of the social sciences and humanities in the global research landscape*. (2014). AAU, AEARU, LERU, GO8, RU11, Russell Group, U15. <http://u15.ca/international>
- Lightowler, C., & Knight, C. (2013). Sustaining knowledge exchange and research impact in the social sciences and humanities: Investing in knowledge broker roles in UK universities. *Evidence & Policy*, 9(3), 317–334. <https://doi.org/10.1332/174426413X662644>
- MacDonald, R. (2017). “Impact”, research and slaying zombies: The pressures and possibilities of the REF. *International Journal of Sociology and Social Policy*, 37(11–12), 696–710. <https://doi.org/10.1108/IJSSP-04-2016-0047>
- MacGregor, S. (2019). Incremental changes to the co-produced pathway to impact [blog post]. *Research Impact Canada*. <http://researchimpact.ca>
- MacGregor, S., & Phipps, D. (2020). How a networked approach to building capacity in knowledge mobilization supports research impact. *International Journal of Education Policy and Leadership*, 16(5), 1–22. <https://doi.org/10.22230/ijep.2020v16n5a949>
- Mackillop, E., Quarmby, S., & Downe, J. (2020). Does knowledge brokering facilitate evidence-based policy? A review of existing knowledge and an agenda for future research. *Policy & Politics*, 48(2), 335–353. <https://doi.org/10.1332/030557319X15740848311069>

- Mallidou, A. A., Atherton, P., Chan, L., Frisch, N., Glegg, S., & Scarrow, G. (2018). Core knowledge translation competencies: A scoping review. *BMC Health Services Research*, *18*, 1–15. <https://doi.org/10.1186/s12913-018-3314-4>
- McDowell, G. R. (2003). Engaged Universities: Lessons from the Land-Grant Universities and Extension. *The ANNALS of the American Academy of Political and Social Science*, *585*(1), 31–50. <https://doi.org/10.1177/0002716202238565>
- McKean, M., & Howard, A. (2017). *Building connections. Platforms for education & skills*. Ottawa, Canada: The Conference Board of Canada. https://www.conferenceboard.ca/docs/default-source/education/19203_spse_strategic_brochure_web.pdf?sfvrsn=f1477f13_2
- McKean, M., & Robbins, M. (2016). Beyond citations: Knowledge mobilization, research impact, and the changing nature of academic work. Ottawa, ON: The Conference Board of Canada. <https://www.conferenceboard.ca>
- Milat, A. J., Bauman, A. E., & Redman, S. (2015). A narrative review of research impact assessment models and methods. *Health Research Policy and Systems*, *13*, 1–7. <https://doi.org/10.1186/s12961-015-0003-1>
- Morton, S. (2015). Progressing research impact assessment: A “contributions” approach. *Research Evaluation*, *24*(4), 405–419. <https://doi.org/10.1093/reseval/rvv016>
- Nutley, S. M., Walter, I., & Davies, H. T. O. (2007). *Using evidence: How research can inform public services*. Bristol, United Kingdom: Policy Press.
- Nyström, M. E., Karlton, J., Keller, C., & Andersson Gäre, B. (2018). Collaborative and partnership research for improvement of health and social services: Researcher’s experiences from 20 projects. *Health Research Policy and Systems*, *16*, 1–17. <https://doi.org/10.1186/s12961-018-0322-0>
- Oliver, K., & Faul, M. V. (2018). Networks and network analysis in evidence, policy and practice. *Evidence & Policy*, *14*(3), 1–11. <https://doi.org/10.1332/174426418X15314037224597>
- Phipps, D., Cummings, J., Pepler, D., Craig, W., & Cardinal, S. (2016). The co-produced pathway to impact describes knowledge mobilization processes. *Journal of Community Engagement and Scholarship*, *9*(1), 31–40. <http://jces.ua.edu/>
- Pinar, M., and Unlu, E. (2019) Evaluating the potential effect of the increased importance of the impact component in the Research Excellence Framework of the UK. *British Educational Research Journal*. *46*(1), 140–160. <https://doi.org/10.1002/berj.3572>
- Powell, A., Davies, H., & Nutley, S. (2017). Missing in action? The role of the knowledge mobilisation literature in developing knowledge mobilisation practices. *Evidence & Policy*, *13*(2), 201–223. <https://doi.org/10.1332/174426416X14534671325644>
- Powell, A., Davies, H., & Nutley, S. (2018). Facing the challenges of research-informed knowledge mobilization: ‘Practising what we preach’? *Public Administration*, *96*(1), 36–52. <https://doi.org/10.1111/padm.12365>
- Redman, S., Turner, T., Davies, H., Williamson, A., Haynes, A., Brennan, S., ... Green, S. (2015). The SPIRIT Action Framework: A structured approach to selecting and testing strategies to increase the use of research in policy. *Social Science & Medicine*, *136–137*, 147–155. <https://doi.org/10.1016/j.socscimed.2015.05.009>
- Rittel, H. W. J., & Webber, M. M. (1973). Dilemmas in a General Theory of Planning*. In *Policy Sciences* (Vol. 4).

- Sá, C., Faubert, B., Edelstein, H., & Qi, J. (2012). Understanding how organisations use the internet to mobilise knowledge: Findings from the field of education. *International Journal of Management in Education*, 6(1/2), 1–21. <https://doi.org/10.1504/IJMIE.2012.043998>
- Sá, C., Li, S. X., & Faubert, B. (2011). Faculties of education and institutional strategies for knowledge mobilization: An exploratory study. *Higher Education*, 61, 501–512. <https://doi.org/10.1007/s10734-010-9344-4>
- Social Sciences and Humanities Research Council of Canada. (2020, March 23). 2020 transformation competition. <https://www.sshrc-crsh.gc.ca/funding-financement/nfrf-fnfr/transformation/2020/competition-concours-eng.aspx>
- Straus, S. E., Brouwers, M., Johnson, D., Lavis, J. N., Légaré, F., Majumdar, S. R., McKibbin, K. A., Sales, A. E., Stacey, D., Klein, G., & Grimshaw, J. (2011). Core competencies in the science and practice of knowledge translation: Description of a Canadian strategic training initiative. *Implementation Science*, 6, 1–7. <https://doi.org/10.1186/1748-5908-6-127>
- Universities Canada. (2019, August 2). Pre-budget 2020 submission: Investing in people, research and innovation. <https://www.univcan.ca/media-room/publications/>
- van der Graaf, P., Shucksmith, J., Rushmer, R., Rhodes, A., & Welford, M. (2019). Performing collaborative research: A dramaturgical reflection on an institutional knowledge brokering service in the North East of England. *Health Research Policy and Systems*, 17, 1–9. <https://doi.org/10.1186/s12961-019-0449-7>
- Ward, V., House, A., & Hamer, S. (2009). Knowledge brokering: The missing link in the evidence to action chain? *Evidence and Policy*, 5(3), 267–279. <https://doi.org/10.1332/174426409X463811>
- Weick, K. E., Sutcliffe, K. M., & Obstfeld, D. (2005). Organizing and the process of sensemaking. *Organization Science*, 16(4), 409–421. <https://doi.org/10.1287/orsc.1050.0133>
- Williams, K., & Grant, J. (2018). A comparative review of how the policy and procedures to assess research impact evolved in Australia and the UK. *Research Evaluation*, 27(2), 93–105. <https://doi.org/10.1093/reseval/rvx042>
- Wye, L., Cramer, H., Farr, M., West, N. C., Carey, J., Robinson, R., & Anthwal, R. (2019). Collective knowledge brokering: The model and impact of an embedded team. *Evidence & Policy*. Advance online publication. <https://doi.org/10.1332/174426419X15468577044957>