Encouraging and Evaluating Non-Traditional Impacts of Scholarly Research

Custom Research Brief

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I. Research Methodology

Project Challenge  Leadership at a member institution approached the Council with the following questions:

- How do different disciplines measure scholarly impact?
- How important are traditional metrics of research impact to comparative universities and to the faculty at these universities?
- What other non-traditional metrics of scholarly impact are used at comparative universities? Specifically, how do comparative universities measure community engagement, solutions to societal problems, economic or regional development, relevance and uptake by end-users, or policy development and regulatory governance?
- How were non-traditional metrics developed? How are they used specifically to measure knowledge translation/mobilization and impact of blogs, books, op-eds, interviews, community engagement, etc.?
- How have scholarly impact metrics (traditional and non-traditional) been evaluated for quality and accuracy?
- How are non-traditional metrics used in terms of tenure and promotion for faculty members?

Project Sources

- Australian Government: Australian Research Council (http://www.arc.gov.au/)
- Education Advisory Board’s internal and online (www.educationadvisoryboard.com) research libraries
- Institutional web sites
- MacLean’s University Rankings (http://oncampus.macleans.ca/education/rankings/)
- Research Excellence Framework (http://www.ref.ac.uk/)
- Rewarding Community-Engaged Scholarship: Towards the Transformation of University Policies and Procedures (http://engagedscholarship.ca/)
- STAR METRICS (https://www.starmetrics.nih.gov/)
The Council interviewed vice presidents for research and other relevant staff at Canadian, Irish, and American institutions.

### A Guide to the Institutions Profiled in this Brief

<table>
<thead>
<tr>
<th>Institution</th>
<th>Region</th>
<th>Classification</th>
<th>Approximate Enrollment (Total/Undergraduate)</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>University A</td>
<td>United States: Midwest</td>
<td>Research Universities (very high research activity)</td>
<td>41,000/32,200</td>
<td>Public</td>
</tr>
<tr>
<td>University B</td>
<td>Eastern Ireland</td>
<td>N/A</td>
<td>24,600/17,600</td>
<td>Public</td>
</tr>
<tr>
<td>University C</td>
<td>Western Canada</td>
<td>Medical Doctoral</td>
<td>46,500/36,500</td>
<td>Public</td>
</tr>
<tr>
<td>University D</td>
<td>United States: Pacific West</td>
<td>Research Universities (very high research activity)</td>
<td>35,800/25,500</td>
<td>Public</td>
</tr>
<tr>
<td>University E</td>
<td>Eastern Canada</td>
<td>Medical Doctoral</td>
<td>37,900/32,600</td>
<td>Public</td>
</tr>
<tr>
<td>University F</td>
<td>Western Canada</td>
<td>Comprehensive</td>
<td>22,400/18,800</td>
<td>Public</td>
</tr>
<tr>
<td>University G</td>
<td>Eastern Canada</td>
<td>Comprehensive</td>
<td>29,600/25,400</td>
<td>Public</td>
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</table>

**Source:** National Center for Education Statistics and MacLean’s University Rankings

### Definition of Terms

- **Research Impact:** In this brief, the term *research impact* refers to any short- or long-term outcomes or effects that scholarly research contributes to a society, economy, environment, and/or culture.

- **Research Metric:** A *research metric* is any measurement used to evaluate the impacts of scholarly research. These measurements (e.g., citation index, critical acclaim, patents, partnerships, etc.) are used internally during faculty evaluation for promotion and tenure, and externally when communicating an institution’s impact to the public.
II. Executive Overview

Key Observations

Non-traditional impacts of scholarly research are emerging in various disciplines to supplement more traditional impacts, with the purpose of demonstrating the value of research on the regional or national society, culture, and economy. Across contact institutions, these non-traditional impacts of scholarly research include community engagement, entrepreneurship, economic development, policy development, and creative activity.

Traditionally, academics rely on publications, citation metrics, and external funding to evaluate the quality and impact of scholarly research; however, contacts agree that evaluating scholarly activities by these metrics alone does not provide a complete understanding of impact. At contact institutions, academic scholars use digital work, career paths of graduate students, community partnerships, patents, startup companies, job creation, newspaper or media articles, critical acclaim, and other metrics to evaluate impact of scholarly research.

Currently, select nation-wide and institutional initiatives are being organized to assess current impact metrics, develop new metrics, recognize non-traditional scholarship, and reward faculty for participating in these scholarly activities. One such initiative is a partnership between eight Canadian universities and a national organization, the Community-Campus Partnerships for Health, based out of the University of Guelph; the partnership was created to encourage university culture, policies and practices to recognize and reward community engaged scholarship.

The office of the vice president for research at two contact institutions actively encourage faculty participation in scholarly research that results in non-traditional impacts. Annually, University F presents research awards to faculty demonstrating excellence in research, knowledge mobilization, artistic expression, and innovation and entrepreneurship. Both University E and University F established offices of community engagement and research to encourage community engagement activities and scholarship, as well as promote faculty recognition of these achievements.

Even though governing bodies or institutional research offices may encourage non-traditional impacts of scholarly research, academic departments may not recognize these efforts as important during faculty evaluations for promotion and tenure. Contacts report that any faculty member may present a non-traditional impact in their promotion and tenure documents, but committees ultimately determine the quality and importance of each scholarly activity on a case-by-case basis. Impacts are reportedly not evaluated by qualitative measures, but instead through anecdotal evidence.

Across contact institutions, decisions regarding promotion and tenure of faculty members are influenced by the discipline of the scholar, the promotion and tenure committee, and institutional culture. Traditional impacts of scholarly research dominate promotion and tenure decisions at the majority of contact institutions.
III. Non-Traditional Impacts and Metrics of Scholarly Research

Due to recent pressure from government and public bodies, academic scholars must increasingly demonstrate the impacts of their scholarly research on society, culture, and the economy. However, traditional impacts of scholarly research (e.g., knowledge translation and training) fail to provide a complete understanding of scholarly impacts on these areas, especially in certain disciplines. Furthermore, heavy reliance on traditional impacts may discourage scholars from pursuing more non-traditional outcomes of research, mainly due to concerns regarding promotion and tenure.

Global Efforts to Measure Scholarly Research Impacts

Currently, some governing bodies and individual institutions of higher education are implementing strategies to encourage non-traditional scholarly research impacts among their faculties; as a result, these bodies must also create frameworks to measure the quality and impacts of those scholarly activities as well as more traditional impacts. The following three examples demonstrate recent actions taken by governing bodies to measure the quality of scholarly research, which encompass both traditional and non-traditional impacts:

- **Australia**: In 2010, the Australian Research Council (ARC), a government agency within the Industry, Innovation, Science, Research and Tertiary Education department, launched the Excellence in Research for Australia (ERA) initiative. The initiative strives to assess research quality within Australia’s higher education institutions using a combination of indicators and peer review. The first full ERA process was completed in 2010, and a subsequent evaluation of university research performance is scheduled for 2012.¹

- **United Kingdom**: The Higher Education Funding Council for England plans to use a new peer review system, the Research Excellence Framework (REF), to assess the quality of research in British higher education institutions, to be completed in 2014.²

- **United States**: The STAR METRICS program is a collaborative effort between three U.S. governmental agencies (the National Science Foundation, National Institutes of Health, and White House Office of Science and Technology Policy) and U.S. research institutions to create standard measures to assess the impact of federal research and development investments. The initiative will continue indefinitely, dependent on its success and the volume of voluntary participation.³

Traditional and Non-Traditional Scholarly Research Impacts

Individual institutions of higher education across the United States, Canada, and Ireland have identified the following traditional and non-traditional impacts of scholarly research.

**Traditional Impacts**

Traditional impacts of scholarly research are those that historically have been measured and valued highly in academia. Though this definition may vary by discipline, the following two traditional impacts of scholarly research seem to be widely accepted by all academic scholars, and primarily used during faculty evaluation for promotion and tenure:

- **Knowledge Translation**: Historically, the most frequently measured and highly valued research impact is the communication of scholarly research results or outcomes via peer-

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reviewed publications, books, or conference presentations in order to expand the knowledge base among academics within the discipline. Common mechanisms for knowledge translation differ depending on the discipline; for example, the natural sciences discipline relies on peer-reviewed journals while humanities scholars produce a larger number of books.

- **Training**: Contacts at University B emphasize the importance of educating graduate students in order to increase the skills base of the discipline’s workforce.

**Non-Traditional Impacts**

Non-traditional impacts of scholarly research are emerging in various disciplines to supplement more traditional impacts in order to demonstrate the value of research on the regional or national society, culture, and economy. Across contact institutions, scholars increasingly utilize their research findings to produce the following impacts:

- **Community Engagement**: Increasingly, academic scholars partner with community members to drive positive social change. Contacts at University D explain that community engagement and community-based research is common practice among those scholars whose discipline by nature interacts with the community, such as public policy or health.

- **Entrepreneurship**: According to contacts at University A, academic scholars who translate their research into products and companies are more prevalent than ever before.

- **Economic Development**: Annually, University E’s office of Institutional Research and Planning estimates the university’s direct and indirect impacts on the local economy. Direct impacts include local expenditures of the university’s students, faculty, staff and visitors, while the indirect impacts include effects of university graduates and faculty research.

- **Policy Development**: Faculty within an addictions research center at University F used their research on the correlation between alcohol content and alcohol pricing to influence liquor pricing policies in Canada and Scotland.

- **Creative Activity**: Depending on the nature of each discipline, creative activity can be defined as a traditional or non-traditional impact. For example, fine arts and performance arts scholars develop creative activities as the main thrust of their research. However, developing creative activities as an anthropologist, historian, or scientist may be viewed as non-traditional by peers.

**Interdisciplinary Research Requires Non-Traditional Metrics**

Across contact institutions, the quantity of interdisciplinary research programs and partnerships is significantly increasing, mostly due to encouragement from governing bodies and university research offices. The research office at University C supports a collaborative, interdisciplinary research network that partners academic scholars and early childhood development practitioners in the community. Due to the nature of interdisciplinary scholarly outputs, contacts at University C report that interdisciplinary research units use non-traditional metrics of scholarly research more often than traditional programs. In the past year, the Provost at University A formed a committee to examine the role of interdisciplinary research in decisions about faculty promotion and tenure and explore possible metrics for evaluation.

“Mobilization of knowledge is a lot more complicated than just creating companies or licensing patents – it is anything that makes society better.”

-Council interview
Traditionally, academics rely on publications, citation metrics, and external funding to evaluate the quality and impact of scholarly research. Although many in the academic community agree about the necessity of alternative metrics to accurately evaluate scholarly research, they have difficulty reaching an agreement on the most appropriate metrics. Although contacts report that a few non-traditional metrics are currently in use by their research offices and academic departments, contacts express the necessity of continuing development of these measures. Contacts describe the following non-traditional metrics for evaluating the impacts of scholarly research at their institutions:

### Impacts and Metrics

<table>
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<tr>
<th>Knowledge Translation</th>
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<tbody>
<tr>
<td>Websites or Blogs</td>
</tr>
<tr>
<td>Social Media</td>
</tr>
<tr>
<td>Videos or Podcasts</td>
</tr>
<tr>
<td>Discussion Forums</td>
</tr>
<tr>
<td>Article Downloads</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Training</th>
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<tbody>
<tr>
<td>Career Paths of Graduate Students</td>
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<table>
<thead>
<tr>
<th>Community Engagement</th>
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<tbody>
<tr>
<td>Committees</td>
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<tr>
<td>Reports or White Papers</td>
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<tr>
<td>Evaluation Letters</td>
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<table>
<thead>
<tr>
<th>Entrepreneurship</th>
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</thead>
<tbody>
<tr>
<td>Patents or Licenses</td>
</tr>
<tr>
<td>Start-Up Companies</td>
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<tr>
<td>Revenue</td>
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</table>

Most contacts agree that while emerging forms of digital knowledge translation improve communication with the public and increase the reputation of an institution, it is difficult to understand or measure their impact. Emerging analytical software, such as Altmetrics, aims to measure digital scholarly interactions (e.g., tweets, blogs, bookmarks, downloads), but does not provide a measure of impact or importance. Earlier this year, the Modern Language Association (MLA) issued new guidelines for how digital scholarship should be evaluated during hiring, promotion, and tenure decisions; however, it is unclear how these guidelines will be adopted by institutions of higher education. Contacts across profiled institutions continue to rely on peer review to determine the strength of a scholar’s digital presence.

Multiple Canadian institutions hope to measure both the quantity of graduate students as well as the quality and impact of their career paths after graduation. However, effective metrics for these impacts have reportedly not been developed.

Contacts at University C and University of F emphasize the importance of not evaluating community engagement solely on activity; a scholar could participate in a large number of committees without making a significant contribution or impact. Contacts rely on evaluation letters from community members to determine the importance of a scholar to a given community.

American and Canadian contacts utilize qualitative measures to evaluate a scholar’s entrepreneurship activities, such as number of patents or licenses, number of start-up companies, and generated revenue. Contact institutions have not developed metrics to evaluate quality and the impact of entrepreneurship activities on society or the local economy.

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Multiple contacts cite job creation as a primary metric of how an institution’s research portfolio impacts a local economy. In addition, contacts at University D consider the number of local biotechnology and information technology firms drawn to the region to determine the local impact of research in those areas. Contacts at University A assess the number of partnerships with local industry as a measure of the university’s impact on the local economy.

Contacts at University E explain that in addition to policy change and creation, a scholar may be evaluated based on the influence of a newspaper or magazine article on policy decisions. In addition to influencing public and policy maker opinions, newspaper or magazine articles raise an institution’s reputation by increasing visibility in the public realm.

Contacts explain that scholars traditionally evaluate the quality of an artistic performance by the number of awards or honors it receives. Recently, scholars have also been assessing performance details and reactions to evaluate quality, such as venue, attendance, critical acclaim and/or controversy. Many artistic performances still rely on peer review for evaluation.

IV. Institution-Wide Efforts to Understand and Encourage Non-Traditional Research Impacts

“Rewarding Community Engaged Scholarship” Initiative

A current partnership between eight Canadian universities and a national organization, the Community-Campus Partnerships for Health, pledges to collaborate to change university culture, policies and practices in order to recognize and reward community engaged scholarship. Based at the University of Guelph, the initiative includes the University of Alberta, University of Calgary, Memorial University of Newfoundland, University of Regina, University of Saskatchewan, University of Victoria, and York University. The initiative includes three working groups; representatives from participating institutions meet in person and communicate via email in order to write and disseminate a final report on the following topics:

- **Institutional Assessment and Change**: Investigating measurements of community engaged scholarship that universities can report to the public
- **Faculty Assessment**: Investigating metrics to include in promotion and tenure policies for evaluation of faculty community engaged scholarship
- **Scholar Development**: Investigating strategies to encourage community engaged scholarship activities and best practices

*Civic Engagement Committee at University F*

Established in 2009 for a two-year term, the committee consisted of community members, university members and report to four vice presidents. Over the course of one term, the council was tasked with developing an inventory of current civic engagement activities across campus, creating a mechanism for reporting these activities annually, and establishing
measurements for evaluating the impacts of these activities. The committee held meetings, discussions, working groups, and consultations and wrote a final report of all findings. The steering council concluded that civic engagement is occurring in all departments and units, but few departments quantify the efforts. The council proposed a series of recommendations to vice presidents of the university, but future changes to be implemented are still being determined.

**Committees across Multiple Contact Institutions**

- In March 2012, the research office of University B established a subcommittee to develop a framework for evaluating scholarly impacts beyond the quantity of publications and books. The subcommittee plans recommend an implementation strategy for June 2013.
- The research office at University G formed a committee to assess citation impact tools and a separate committee to explore standardized metrics of scholarly activity, how they apply to different disciplines, and how they can be used in departmental rankings.
- Contacts at University C hired a consultant to collaborate with academic departments to measure the impacts of research across the institution. The purpose of the engagement is to evaluate the strength of the institution’s research efforts as well as contribute to promotion and tenure policies.

**Efforts to Encourage Non-Traditional Research Impacts**

**Faculty Research Awards at University F**

Annually, University F presents research awards to faculty members demonstrating excellence in research, knowledge mobilization, artistic expression, and innovation and entrepreneurship. This past year, the excellence in innovation and entrepreneurship award was presented to a history scholar for his innovative and interactive online program about Canadian history.

**Offices of Community Engagement and Research at University E and University F**

Both University E and University F established offices of community engagement and research to encourage community engagement activities and scholarship, as well as to promote faculty recognition of these achievements.

**Additional Strategies**

- **Continuous Dialogue:** Contacts at University F emphasize the importance of continuous dialogue about non-traditional impacts of scholarly research to influence institutional culture change.
- **Create Pathways for Impact:** Contacts at University B emphasize the importance of creating an environment for faculty in which non-traditional scholarly research is valued and rewarded. Contacts explain that an institution should not create metrics before creating a pathway for the impacts to occur.
- **Natural Evolution of Research:** Contacts at University A expect that policies regarding promotion and tenure will naturally shift as the nature of research evolves. For example, faculty partnerships between colleges increased 30 percent in the past three years; contacts believe that policies will evolve to recognize and reward faculty as non-traditional scholarly activities become more common in the future.
V. Role of Non-Traditional Impacts during Departmental Promotion and Tenure Evaluations

Even though governing bodies or institutional research offices may encourage non-traditional impacts of scholarly research, academic departments may not recognize these efforts as important during faculty evaluation for promotion and tenure. Across contact institutions, each academic department elects a committee of peers to determine a faculty member’s eligibility for promotion and tenure. The decentralized promotion and tenure process in place at most contact institutions allows each academic department to interpret the institutional guidelines differently and potentially impose stricter criteria for evaluating scholarship. Contacts report that any faculty member may present non-traditional impacts in promotion and tenure documents, but the committees ultimately evaluate the quality and importance of each scholarly activity on a case-by-case basis. Although contacts report that faculty produce non-traditional scholarly outputs, administrators struggle to evaluate the impact of these outputs in relation to promotion and tenure. Contacts at University C explain that the difficulty of evaluating non-traditional outputs can diminish their importance during promotion and tenure review.

Across contact institutions, decisions regarding promotion and tenure of faculty members are influenced by the discipline of the scholar, the promotion and tenure committee, and institutional culture.

**Academic Discipline**

The value of non-traditional impacts of scholarly research varies by discipline, according to all contacts. For example, engineering scholars may value patents and licenses more than a scholar in the humanities. Contacts at University D explain that non-traditional impacts are controversial when evaluating faculty members for promotion and tenure because each discipline rewards faculty members based on different scholarly activities and metrics; for example, encouraging economic development impacts could exclude the humanities and social sciences, overvalue engineering, and devalue basic research.

**Promotion and Tenure Committee**

All contacts report that faculty members include non-traditional scholarly impacts in their promotion and tenure files, but committees weigh these activities with varying levels of importance at each institution and within each discipline on a case-by-case basis. Contacts explain that because adequate metrics for evaluating non-traditional impacts have not been developed, committees must rely on peer review to determine the quality and importance of these scholarly activities. Therefore, faculty members must compose a committee with expertise in non-traditional scholarly activities for adequate judgment. In addition, faculty members should gather evaluation letters from external peers that describe the importance of any non-traditional activities, such as letters from community members or those familiar with digital scholarship.

**Promotion and Tenure at University G**

Contacts report that the culture of University G encourages faculty members to include non-traditional impacts in their promotion and tenure files. Due to the small number of deans and departments, administrators at University G can influence the department’s views on non-traditional impacts in order to better control promotion and tenure decisions across disciplines.
Institutional Culture

According to contacts, promotion and tenure decisions are either dominated by traditional impacts or require a combination of traditional and non-traditional impacts. However, institutions that require a combination of impacts still describe traditional impacts as more important. Contacts at University C explain that faculty members do not commonly include non-traditional impacts in their files because they understand that promotion and tenure at their institution is based on traditional impacts. The graphic below illustrates the overall importance of non-traditional impacts of scholarly research at each contact institution.

Traditional impacts of scholarly research dominate the promotion and tenure decisions at the majority of contact institutions.

- University A
- University B
- University C
- University D
- University E

Promotion and Tenure Requires a Combination of Traditional and Non-Traditional Impacts

- University F
- University G