



Family & Community Medicine
UNIVERSITY OF TORONTO

Michael Kidd
Office of the Chair

January 27, 2020

Dr. Risa Freeman
Chair, Adjudication Committee, Education Development Fund
c/o Kaki Narh Blackwood, Administrative and Project Manager, Education Vice-Deans
500 University Ave., 3rd Floor
Toronto, ON M5G 1V7

Dear Dr. Freeman:

Risc

I am writing to support Dr. Betty Onyura's application to the 2020 Education Development Fund competition. Her project entitled "*Looking into the Labour of Bridge Building & Silo Deconstruction: A Multi-Case Inquiry of Knowledge Intermediaries in Medical Education*" has the Department's full support.

Dr. Onyura proposes to identify and analyze organizations within the Faculty of Medicine that function as knowledge intermediaries, in order to understand the nature of their knowledge brokering work. Her ultimate goal is to identify gaps and opportunities to facilitate knowledge brokering in medical education at UofT.

I have no hesitation in confirming the commitment of the Department and Family and Community Medicine to provide matched funding for Dr. Onyura's project.

Yours sincerely,

Michael Kidd AM FAHMS
Professor and Chair
Department of Family & Community Medicine

Cc: Dr. Rick Penciner
Ms. Caroline Turenko

#5

COMPLETE

Collector: Web Link 1 (Web Link)
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Page 2: Section 1 | Project Team Information

Q1 Project Lead(s):

Name of Principal Investigator:	Betty Onyura
Home Academic Department:	Department of Family and Community Medicine
Principal Investigator Faculty Appointment Status:	Assistant Professor
Year of Initial Faculty Appointment:	2017
Telephone:	416-864-6060 ext 77146
Email:	betty.onyura@unityhealth.to
Principal Investigator Department Chair Name:	Michael Kidd
Principal Investigator Department Chair Email Address:	DFCM.ChairsOffice@utoronto.ca
Principal Investigator Department Business Officer/Manager Name:	Caroline Turenko
Principal Investigator Department Business Officer/Manager Email Address:	caroline.turenko@utoronto.ca
Title, Date of Funding and role in previously applied for and/or funded educational grants:	(1) Cheung, E., Onyura, B., McKnight, A., Landes, M. A A Program Evaluation of the Toronto Addis Ababa Academic Collaboration in Emergency Medicine (TAAAC-EM). Funded by the University of Toronto, Education Development Fund. Role (Role: Collaborator); (2) Onyura, B (2018) A feasibility evaluation and knowledge mobilization study for leadership development in medical postgraduate education. Funded by the Art of the Possible Grant, DFCM, University of Toronto (\$5,000); Role: PI. (3) Bernard, C., Freeman, R., Onyura, B., Knifed, E., Wagner, F., Williams, C., Abner, E., Incadonor, N., Kulamakan, K., From Classroom to Clinic: Assessing a novel integrated curriculum to teach ethical decision-making for future physicians. Funded by the Phsyician's Services Incorporated (PSI) Foundation (\$79,500). Role: Collaborator
Have you been the 1st, 2nd or last author on more than 1 publication?	Yes

Q2 Co-Principal Investigator Information (if applicable):
(One Co-Principal Investigator per project ONLY. The Co-PI must have a faculty appointment at the University of Toronto.)

Respondent skipped this question

Q3 Project Collaborator(s): In the section below, please list your project collaborator(s) including First Name, Last Name, Department and Title. Please note: A collaborator must be a faculty member, learner OR staff within the Faculty of Medicine or its affiliated hospitals). Please see EDF website for further details.

Collaborator 1:

Lindsay Baker, Department of Psychiatry, Assistant Professor

Collaborator 2:

Farah Friesen, Centre for Faculty Development at Unity Health Toronto, Education Knowledge Broker

Q4 Project Senior Advisor(s) In the section below, please list your project senior advisor(s) including First Name, Last Name, U of T Faculty of Medicine Department and Title. Please note: A senior advisor must be a faculty member engaged in the educational activities in basic, clinical or rehabilitation sciences at the U of T, Faculty of Medicine. Please see EDF website for further details.

Senior Advisor 1:

Karen Leslie, Department of Paediatrics, Professor

Senior Advisor 2:

Stella Ng, Department of Speech and Language Pathology, Assistant Professor

Page 3: Section 2 | Project Outline

Q5 Project Title:

Examining the Labour of Bridge Building & Silo Deconstruction: A Multi-Case Inquiry of Knowledge Intermediaries in Medical Education

Q6 Please indicate if this is an Innovation and Development Project OR a Research Project (please select one):

Research Project

Q7 Is this a collaborative project?

Yes

Q8 Is this project application a re-submission?

No

Q9 Executive Summary: Project Abstract with 100 word limit (5% weighting will be applied to this section) Summary of proposed project and its relevance to the goals of the Education Development Fund and the broader Faculty of Medicine Strategic Plan.

Curricular reform efforts urgently require better integration of research evidence with educational policy and practice (1). However, despite knowledge mobilization (KMb) efforts to better align practice and research, gaps persist (2,3). One reason for these gaps may be a preoccupation with individual-level behaviour, while institutional-level efforts remain understudied. Intermediary organizations offer a critical link in brokering collaborative research-practice-policy relationships (4,5). Accordingly, this project's examination of the strategies, innovations, challenges and successes of organizational-level KMb entities would provide valuable insight and recommendations for strengthening research-practice relationships across medical education. This aligns with the Faculty of Medicine's strategic priority to develop boundary-spanning, collaborative, work ecosystems (6).

Q10 Background: 1/2 page maximum - approximately 275-300 words single spaced (10% weighting will be applied to this section) The institutional context surrounding the project; a literature review and summary of the current state of knowledge regarding this topic; and a description of the relevant work of the applicant(s), (if applicable).

Education reform remains daunting despite a growing base of education research (7–9). This research base proffers significant potential for improving learning environments, instructional quality, and student outcomes (9,10). Yet research-policy-practice gaps persist (2,11). These gaps mean medical education may be falling short of its mandate to prepare the best possible clinicians. Proponents of knowledge mobilization (KMb) aim to narrow these gaps (2,12,13) and strengthen the research-practice relationship (11). In our field, clinician-educators create and draw upon diverse sources of knowledge to guide their practice – e.g. workplace learning, social relationships, practical and ethical reasoning (14). Further, many face barriers in the uptake of research evidence that include a lack of accessibility and relevance of research products like systematic reviews (15–17). Thus the popular terms of 'knowledge translation' or 'knowledge exchange,' fit poorly for our field as they present hierarchical and dichotomous relationships between knowledge types, 'knowledge users,' and 'knowledge producers' (11,18,19). Members of our team have proposed KMb as a more fitting way forward for our field (15). KMb highlights the ongoing social and interactive nature of the research-practice connection (11). Correspondingly, efforts to support evidence-informed educational reform require significant investment in organizational-level knowledge intermediaries who can mobilize bidirectional exchange of research and practical knowledge in contextually relevant ways (4,5). Within our local context, such entities include extra-departmental units (e.g. Centre for Faculty Development) and intra-departmental units (e.g. Office of Education Scholarship within the DFCM). However, available research on the research-practice relationship in medical education (including work led by the PI) has thus far focused on evidence use at the individual-level (12,13). Scant empirical attention has been paid to KMb work of organizational-level knowledge intermediaries, despite growing recognition of these entities as a critical link in research-practice relationships (5). This proposed project would focus on examining the strategies, innovations, successes, and challenges of these knowledge intermediaries across medical education.

Q11 Rationale and perceived educational gap or need: 1 page maximum - approximately 525-575 words single spaced (20% weighting will be applied to this section). Description of the impetus for proposed project, clear demonstration or statement of current practice (i.e. environmental scan) the gap or need identified, and detail of perceived value of project outcome.

In medical education, calls to better align practice and research evidence persist, citing the need and potential for greater effectiveness and societal accountability(2,3,12). However, evidence suggests that education, more broadly, is generally slower to adopt evidence-informed policies and practices in comparison to other public services (20). Researchers, clinicians, and administrators often inhabit different worlds with distinct norms, values, constraints, and technical languages (5,21). These social and technical differences compound with the structural organization of workplaces to create distributed silos of groups that consequently 'maintain custody' over different bodies of knowledge. Arguably, none of these groups is independently positioned to drive the bridge-building work of knowledge mobilization (KMb) 5,21. For example, many educators rarely come into contact with primary research reports (4,22) and even syntheses of evidence may be inaccessible for practitioners (16). As primarily clinical experts, many clinician teachers may not have personal expertise in educational research and may find the paradigms used to be difficult to navigate in comparison to clinical research (23). And although non-clinician education researchers in the academic health sciences system wield unique, discipline-based expertise, they may lack domain-specific, clinical knowledge or have limited understanding of ingrained cultural patterns of physician training (23).

Correspondingly, educational systems more broadly, and the academic health sciences system more specifically, need intermediary organizational actors that can perform the intentional work of bidirectional communication of research and practice knowledge between groups (4). Yet despite the growing recognition of the KMb work that organizational-level knowledge intermediaries (also known as knowledge brokers) perform to support the integration of research and practice, (5,24) there has been limited study of their role in medical education. We must emphasize here that although many organizations may engage in KMb work in an ad hoc fashion (4), our interest is in entities that engage in this type of work as a routine part of their mission, with targeted resources. Within medical education, this can include units that dedicate attention to faculty development (15) or Education Scholarship Units, given their diverse foci on capacity building in education scholarship and scholarly teaching (25). Ward and colleagues (5,26) conceptualized three different types of activities that knowledge intermediaries can perform including knowledge management (helping teams find, package and disseminate research findings), linkage and exchange (facilitating interactions among clinicians and scientists), and capacity building (helping clinicians develop their own capacity to mobilize knowledge in future). Other types of knowledge intermediary work have also been identified including the promotion of clinician-generated research that transforms practical concerns into research questions (27). Whereas these conceptualizations help us understand the overarching characteristics of organization level knowledge intermediaries, they provide limited insight on their efficacy, or the challenges inherent to achieving fruitful KMb outcomes.

Available research suggests that the work of being a knowledge intermediary can be as much a social and political labour as it is a technical one, (24,26) requiring attention to the divergent knowledge interests of different groups. Indeed, the collaborative efforts required to facilitate KMb may require the exercise of significant social and cognitive agility, as knowledge intermediaries work simultaneously across professional, structural, hierarchical, and epistemological boundaries (28).

Our research will engage in a novel examination of these processes. We will study the KMb strategies of diverse organizational-level knowledge intermediaries in our system. Further, we will seek to understand why diverse KMb strategies may succeed or falter across various organizations. Ultimately, this work will illuminate innovative and efficacious approaches to KMb in addition to examining gaps and presenting opportunities for change.

Q12 Objective(s): 100 words maximum (5% weighting will be applied to this section)

This study examines the work of organizational-level knowledge intermediaries within the academic health sciences system. Using a multi-case study design, the following research questions are examined:

1. What knowledge mobilization strategies are employed by organizational-level knowledge intermediaries in the academic health sciences system?
 2. How and why are the strategies employed successful (or unsuccessful) in realizing desired outcomes?
 3. What are the gaps and opportunities for knowledge brokers and KMb across medical education?
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Q13 Project Description: 1 page maximum - approximately 525-575 words single spaced (20% weighting will be applied to this section) Descriptions for the different project types should include the following: INNOVATION AND DEVELOPMENT project: Methodology for developing the innovation (material, product, resource), implementation plan, and evaluation approach. OR RESEARCH project: Hypothesis or research question and Methods (study population, study design, sample size, data collection, data analysis).

The proposed project will study the KMb work of organizational-level knowledge intermediaries in medical education using an explanatory, multi-case study design (29,30). Multi-case study designs are ideal for generating insights into what might be common across - and different between - multiple cases, thus supporting theoretical explanation (29). Case studies with an explanatory focus are an ideal approach when the research seeks to answer questions about how and why certain outcomes occur in relation to a prescribed intervention. Characteristic for a case study, multi-source data will be collected to allow for triangulation (30).

Case selection:

Case inclusion criteria are informed by the Cooper (4) national study of knowledge intermediaries in education. They include the following:

- Target audiences: the organization or departmental sub-unit formally connects researchers, clinicians
- Mission or mandate: one or more aspects of the organizations' mandate, mission-vision statement, or strategic plan explicitly relates to KMb (The selection process will be sensitive to the fact that terminology around KMb will be differentially articulated across organizations).
- Location: the unit is affiliated with the University of Toronto or a Toronto Academic Health Sciences Network (TAHSN) affiliated institution
- Formal platform: The organization or departmental sub-unit has an articulable role and role structure (A broad range in size is anticipated).

The following sampling strategies will be utilized to identify potential cases:

- Systematic searching of institutional websites using multiple internet search engines (e.g., Google, DuckDuckGo)
- Direct e-mail and in-person contact with departmental administrators and senior researchers to identify potential cases for inclusion

We anticipate inclusion of well-known units such as the Office of Education Scholarship within the DFCM, the Centre for Faculty Development, and the Centre for Interprofessional Education, among others. We aim to include 6-10 cases; the final number will be determined by search findings, data availability, and participant consent.

Data collection:

Data will be collected using three approaches:

- Publicly available documents

We will collect publicly available information about organizational activities from online records and reports on institutional websites

- Solicited reports

We will directly solicit recent (past 0-5 years) evaluation reports and internal/external reviewer reports from consenting organizations

- Interviews with key stakeholders

We will conduct semi-structured interviews with key stakeholders in the system including:

- System leaders in structural leadership positions (e.g., department chairs, senior education leaders such as VPs of education, research directors)
- Program staff members within selected case organizations
- Clinical faculty from each case organization (who have regular engagement with each case organization as identified through administrative records).

We aim to recruit 10-12 individuals per stakeholder group for a total of 30-36 interviews. See Appendix Ai-iii for our interview guide.

Data analysis and synthesis

Data obtained from case documents will be synthesized using an adapted version of the Qi & Levin (31) tool for assessing the KMb activities of knowledge intermediaries (see Appendix B for sample). We will review documents closely to abstract information in relation to both a priori (Appendix B) and emergent categories.

Interview data will be analyzed using matrix analysis. Matrix analysis involves coding of qualitative data in relation a data matrix of contingent conditions (32). For example, (a) a KMb strategy can be coded in relation to an attained outcome or unanticipated challenge. Our approach will involve both theory-informed deductive and inductive analysis. Upon initial review of transcripts, an inclusive set of codes will be applied to the data iteratively and subsequently grouped into overarching categories that capture critical aspects of the data in relation to the phenomenon of interest.

Q14 Outcomes leading to Integration and Impact: 1 page maximum approximately 525-575 words single spaced (20% weighting will be applied to this section) Description of the potential for enhancement of existing or future programs including: enhancement of professional competencies; implementation strategy; plan for project sustainability; dissemination plan or knowledge translation strategy.

This work will illuminate the role and promise of organizational-level knowledge intermediaries in medical education. It will also describe current and innovative knowledge brokering strategies and illustrate their impact on the research-practice-policy relationship. The study will also help us understand the challenges inherent to the KMB missions of these organizations from diverse stakeholder perspectives. Consequently, this work has direct relevance to the strategic priority of the Faculty of Medicine, in its striving for platforms that can effectively fuse the strengths of diverse groups, increase the real-world impact of research and teaching, and create new possibilities for scholarship, education, and healthcare across our communities⁶.

Critically, the multi-case study approach will allow us to identify gaps in current KMB practices across our academic health sciences system. The findings will provide insight on opportunities for improvement upon the status quo, where the traditional activities of knowledge intermediaries may no longer have desired efficacy. Given this, we will share a brief, accessible summary report of our findings with each participating knowledge intermediary, so that their organization can be directly aware of arising insights and change opportunities.

To further amplify our findings, we will take advantage of some of the innovative and accessible knowledge mobilizing platforms at our host institutions. For example, we will add to the Online Supplement (OS) for Education (developed out of the Centre for Faculty Development) and develop a unique OS on knowledge brokering. The OS provide an open access resource for faculty interested in growing their repertoire of knowledge and skill in relation to selected education topics. It will follow the same successful model of our existing OS and include activities, resources, and tools that faculty can use in their teaching and to inform curriculum development: authorship ethics (www.authorshipethics.com), transformative education (www.teachingfortransformation.com), paradigms of education (www.paradigmsofeducation.com), and scholarly impact (to be launched April 2020, funded by the Department of Psychiatry CPA Excellence Grant). The OS are built on the Webnode platform so that the content can be continually updated. The OS enable asynchronous learning and participation³³ so that faculty can access content and activities at any time and at their own pace. Additionally, findings from the project will be disseminated from local to international venues in the following ways. First, our team includes investigators and senior advisors who engage in multiple committees at the local (e.g. multiple curriculum renewal committees and Faculty of Medicine working groups) and national level (e.g. the Canadian Association for Medical Education) They will strive to draw attention to this work via those platforms. Second, where appropriate, team members will also include findings from this study in some of the foundational faculty development programs over which they have oversight (e.g., the findings might be particularly relevant for the workshop on Collaboration for Education Scholarship for the Stepping Stones Program). This workshop is led by the PI in partnership with a clinician educator). Findings will also be prepared for oral presentations at local, national and international conferences including the Canadian Conference on Medical Education. The project team will also prepare at least one manuscript for a peer-reviewed publication in a leading medical education journal.

Q15 In the space below, please provide the following information related to project feasibility and budget: 1/2 page maximum – approximately 275-300 words single spaced Description of the team including roles and responsibilities of team members. Description of resources available and required (financial, expertise, technology). Disclosure of intended vendors with appropriate quotes if feasible.

The team includes two early career researchers – Dr. Betty Onyura (PI), and collaborator Lindsay Baker- who have acquired pertinent experience leading and supporting diverse research studies in health professions education. They are embedded within two knowledge intermediaries in the system (Dr. Onyura at the Office of Education Scholarship within the DFCM and both at the Centre for Faculty Development). Their shared, CFD office space provides access to necessary tools such as audio recorders, and data management software. They will work collaboratively on data abstraction and synthesis from the multiple data sources. The team is supported by two senior advisors. Dr. Karen Leslie is a paediatrician, and current CFD director. She will lend a medical-educators' perspective to inform data analysis and interpretation. She will also connect the team to senior system leaders, to aid recruitment efforts. Dr. Stella Ng will offer support through her expertise in case study research, epistemologies of practice and critical approaches to KMb. She will leverage her Arrell Family Chair in Health Profession Teaching, which has a specific mandate to bridge education research and practice toward improving health professions' practice and care outcomes. This position creates opportunities to share the study with local and national committees, the Unity Health Network research and education board, and St. Michael's Hospital Foundation. The team includes Education Knowledge Broker, Farah Friesen, who has practical and research experience in KMb. She will ensure study findings are disseminated to stakeholders in usable formats that ease knowledge uptake.

Funding will allow us to recruit a reliable RA to support data collection and data abstraction. The PI will oversee the RA, lead data analysis, and dissemination work with regular team input.

We intend to use NVivo transcription service (external vendor). Their rate of US\$.50 per minute is posted on their website <https://www.qsrinternational.com/nvivo/nvivo-products/transcription>

Q16 Excel Budget (template provided)

EDF Onyura et al budget.pdf (542.6KB)

Q17 A project timeline/schedule (template provided)

EDF Onyura et al project timeline.pdf (434KB)

Page 5: Section 4 | Additional Application Components (not weighted):

Q18 Attestation Form(s):

EDF Attestation - Onyura et al.pdf (414.9KB)

Q19 Department Chair's Endorsement:

ONYURA EDF Chair's Letter Feb 2020.pdf (41.6KB)

Q20 Ethics:

REB Application Page One Confirmation - Onyura et al under review status.pdf (542.2KB)

Q21 CV:

Onyura, B - CV - EDF grant application.pdf (780.1KB)

Q22 Reference List (Optional):

EDF 2020 - References and Appendices - Onyura et al 2020.pdf (1.1MB)

Faculty of Medicine Education Development Fund Application

Project Title: Looking into the Labour of Bridge Building and Silo Deconstruction: A Multi-Case Inquiry of Knowledge Intermediaries in Medical Education

Project Timeline

Project Task/Component	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July +
Selection of knowledge intermediary cases (<i>Systematic search of institutional websites & consultation with key informants to identify target organizations</i>)													
Collection and preliminary collation of publicly available data about selected cases													
Solicitation of evaluation reports, internal/external review data etc. from target organizations													
Abstraction and aggregation of data from collated documents/web sources in relation to KMb activity tool													
Participant recruitment and Interviewing													
Matrix analysis of qualitative interview data													
Synthesis of data across case study and interview findings													
Preparation of dissemination products (abstracts, manuscript drafting, project summaries for case organizations)													

Education Development Fund - Budget Page

Project Title: Examining the Labour of Bridge Building and Silo Deconstruction: A Multi-Case Inquiry of Knowledge Intermediaries in Medical Education

PI: Betty Onyura

1 Year Budget	Funding Sources		
Personnel (include names, roles and detailed itemized duties to be completed for project); Also include salary, stipends and benefits.	Education Development Fund	Department Match	Other/Additional Match Funds
<p>DATA COLLECTION: Research Associate (1) to co-ordinate and conduct 36 interviews at 2 hours per interview (1 hr for interview, 1 hr prep/travel/notes) = 72 hours (2) To communicate with 6-10 case organizations, solicit and compile required documents including multiple evaluation reports, as well as internal and external review documents from the past 0-5 years. Together, the case related data collection should amount to approximately 4.5 hours per case x 10 = 45 hours Rate of pay is \$30/hr + 17% statutory deductions/benefits x the total estimated hours (45 + 72 hrs)</p>	2,053.35	2053.35	n/a
<p>DATA ANALYSIS: Research Associate to assist with analysis. Generally qualitative data analysis equals 3 hours per hour of data collection = 117*3 = 351 hours \$30/hr + 17% statutory deductions/benefits x 351 hours</p>	6,160.05	6,160.05	n/a
Materials, Equipment and Other			
<p>TRANSCRIPTION Nvivo transcription services.US\$.50 per minute. Transcription of interview recordings, 35 1-hour interviews are planned. \$0.67CAD per minute x 2160 minutes (36 hours)</p>	723.6	723.6	n/a
<p>CONFERENCE TRAVEL - e.g. travel and accomodation to CCME to present work (<i>*may be spent in year 2 as outlined in budget guidelines</i>)</p>	\$1,000.00	\$1,000.00	n/a
One Year Totals	\$9,937.00	\$9,937.00	\$0.00