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CASE REPORT

Formative evaluation of an entrepreneurial funding mechanism for training knowledge brokers in occupational therapy relevant research spaces

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ABSTRACT

We examined how a sponsored contract model (1) produced products of scholarly impact in childhood disability; (2) built scholarly capacity of rising practitioners/scholars in health-related professions; and (3) can be optimized to maximize impact. Data from select lab records and interviews were content analyzed and fitted to the Research Capacity Building (RCB) framework that was situated within the Forging Alliances in Interprofessional Rehabilitation Research (FAIRR) logic model. Traditional outcomes included KT products (53%), followed by publications (16%), presentations (10%), grant submissions (10%), and community research partnerships (10%). Trainees emphasized four professional outcomes including: (1) growing a research network, (2) acquiring research skills, (3) transferring research skills, and (4) assuming leadership roles. Trainees provided multiple suggestions to optimize the contract model. Findings suggest this sponsored contract model yields scholarly products and professional benefits to trainees across multiple backgrounds. Stakeholders could consider increasing leadership opportunities for graduate trainees to maximize impact.

Evidence-based practice (EBP) in health-related professions education has produced curriculum designs that require teaching research relevant skills to persons earning entry-level professional degrees (Law & MacDermid, 2008; Tickle-degnen, 2000). There is also increasing emphasis within the occupational therapy (OT) profession for building knowledge translation (KT) workforce capacity (e.g. new AOTA KT toolkit in 2021) (Juckett et al., 2021) to strengthen scholarship of application (Boyer, 1990). KT involves the translation of generated knowledge into action within local organizational contexts. This can include creating tools for implementing knowledge in practice, cultivating research partnerships, and championing organizational research culture (Astle et al., 2020).

Mentorship is important for training students to create and/or translate knowledge to practice (Burgess et al., 2018; Howlett et al., 2020). Mentored research spaces can provide important experiential opportunities for students to practice their learned EBP skills, strengthen their knowledge, skills, and habits for engaging in research to help create knowledge, and/or translate knowledge from research into practice. Mentored research opportunities increase graduate school matriculation rates while building intellectual curiosity, practical academic skills, and motivation for continued research engagement (Lopatto, 2010).

Health-related professions education programs may benefit from complementing their EBP coursework with mentored KT training experiences in research spaces. This combined training might prepare students for acquiring the requisite knowledge, skills, and habits for serving the roles of evidence-based practitioner and knowledge broker. Whereas evidence-based practitioners are skilled in using evidence to guide clinical decision-making with individual clients, knowledge brokers are skilled at contributing to knowledge generation and translation activities, advancing authentic research partnerships, and championing research culture while primarily situated in clinical practice (Slade et al., 2018; Thompson & Schwartz Barcott, 2019). For example, a knowledge broker skilled at contributing to knowledge generation and translation would include an entry level OTD student working with the American Occupational Therapy Association (AOTA) to create a guide to culturally inclusive hair care services and how to incorporate cultural humility into practice (Durbano, 2022). Training knowledge brokers involves teaching students to locate and evaluate the literature, and engaging, educating, and empowering the knowledge users (Thompson & Schwartz Barcott, 2019). Entry-level practitioners with both types of training may be more skilled in applying EBP to

their individual caseloads and applying KT to move knowledge into action within their chosen organizational context.

The purpose of this case report is to describe a formative evaluation of a sponsored contract model for providing health professions students with mentored training in KT within an OT relevant research space. This evaluation was conducted to better understand how this sponsored contract model: (1) produced products of scholarly impact in childhood disability; (2) built the scholarly capacity of rising practitioners and scholars in health-related professions; and (3) can be optimized to maximize its impact.

Background

The environment

Since 2011, the Children's Participation and Environment Research Lab (CPERL) has been housed in OT departments and health science colleges at two public academic research institutions. Since 2015, CPERL has also been housed at the University of Illinois Chicago (UIC), an urban and minority-serving institution that is one of the nation's top 20 most diverse institutions of higher education (US News & World Report, 2022). These contextual factors shape productivity standards and training opportunities, as Research 1 (R1) institutions typically have greater resources for funding translational research activities (Asarta et al., 2018).

As outlined in its lab handbook, CPERL endorses a continuum of mentorship model to conducting multi-site and interdisciplinary research and product development activities at UIC that benefit from authentic engagement with knowledge users (families, service providers, program leadership). This approach to mentored research training places a premium on lab values of teamwork, mentorship, tenacity, innovation, equity, and quality (Children's Participation and Environment Research Lab, 2021).

CPERL members and alumnae have had diverse demographic and disciplinary backgrounds and pursued diverse health-related career trajectories. This diversity enables members to train in a diverse scholarly environment and build meaningful and lasting professional relationships as they contribute to the lab's research agenda. CPERL has become a Black, Indigenous, and people of color (BIPOC) majority led research lab with an anti-racist action plan to elevate its impact (Villegas et al., 2020, 2021).

The case

In 2019, an academic clinician scientist successfully negotiated a sponsored contract between CPERL and *CanChild* Center for Childhood Disability Research. *CanChild*, co-founded by two interdisciplinary scientists with clinical backgrounds in developmental behavioral pediatrics and occupational therapy in 1989, is an internationally recognized interdisciplinary research and knowledge translation hub in childhood disability. *CanChild*'s strategic plan has three pillars: (1) impactful research and knowledge translation, (2) intentional collaboration, and (3) engaged culture (CanChild Centre for Childhood Disability Research, 2020).

This sponsored contract uses an entrepreneurial approach to funding students, scholars, and practitioners in health-related professions with mentored training in the context of the lab's ongoing research and product development activities. The sponsored contract, now in its fourth year, redistributes 50% of revenue from the sale of an assessment product that was developed in CPERL and licensed for distribution by *CanChild*, as paired with an investment of funds from *CanChild*, to fund product development activities in CPERL. These funds are used to recruit and retain talented and committed trainees in undertaking rigorous and timely KT projects, through which they develop knowledge, skills, and habits for pursuing research engaged career paths.

Evaluation

A formative evaluation of this sponsored contract can help funders appraise program scope, preliminary impact, and areas for program improvement. In a formative evaluation, an evaluator collects interim data about a program while it is still occurring. Typically, a program is considered effective if it provides substantial benefits to individuals, communities, or the societies that they are situated in. These benefits should ideally be greater than the financial costs required to run such a program. The rationale for undertaking this type of evaluation was for quality improvement purposes which poses limits to generalizability due to the specific context in which it was conducted and sample characteristics (Fink, 2014).

Guiding framework and model for case evaluation

The Forging Alliances in Interdisciplinary Rehabilitation Research (FAIRR) model (Gill et al., 2017) was paired with Research Capacity Building (RCB) framework (Cooke, 2005) to guide this formative evaluation of the CPERL-*CanChild* sponsored contract (see Figure 1). As shown in Figure 1, RCB framework concepts were nested within the FAIRR logic model to further elucidate how the traditional and professional outcomes are acquired in sequence over time. The logic model also details the level of impact certain activities and processes have relative to the overall outputs that result from research capacity building.
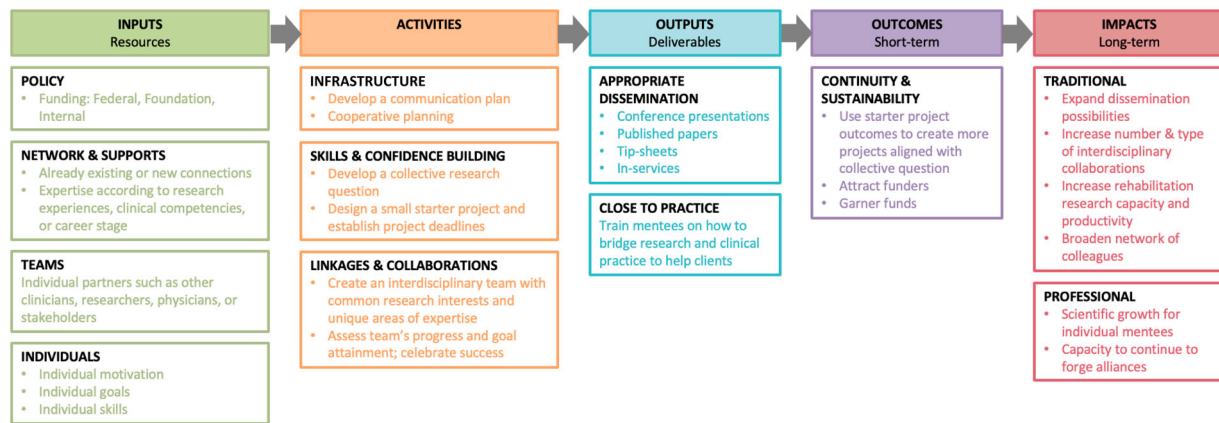
Figure 1. Frame of evaluation.

Definitions of RCB activities and processes were inserted and paired with bulleted illustrative exemplars from the FAIRR model.

The RCB framework also includes two types of outcomes relevant for this formative evaluation of the CPERL-*CanChild* sponsored contract. These outcomes include: (1) traditional outcomes (i.e. publications, presentations, grant submissions, community partnerships, & KT products); and (2) professional outcomes (i.e. research skills acquired, leadership roles, research skill transfer, & growing a research network).

Case evaluation approach

This formative evaluation was undertaken between May and July 2022 as guided by two sources of information. First, information from select lab records were collected to describe trainees and gather information about traditional outcomes. These lab records included three years of CPERL-*CanChild* funder reports, mentorship agreements, professional reviews of progress for each trainee, and products generated with funds from the sponsored contract. By first examining these lab records, interview guide questions and probes could be developed for engaging trainees in rich discussion surrounding their mentored training experiences.

Following lab record review, a series of five individual, semi-structured interviews (in-person or virtually through Zoom) were conducted with trainees to gather information about professional outcomes. The interview guide used was developed by all three authors (DLB, DF, MAK) and piloted before use to ensure its clarity, flow, and feasibility. Each eligible and interested trainee was sent and asked to review and reflect on their lab records prior to the interview. To start each interview, trainees selected their most memorable project to discuss. Interviews lasted between 30 and 45 min in length.

Information abstracted through lab records were imported to a Microsoft Excel file for descriptive

analyses pertaining to traditional outcomes. The first author (DLB) calculated the frequency of each traditional outcome. Interviews were audio-recorded via Zoom and transcribed verbatim using NVivo (version 12) software (QSR International Pty Ltd, 2020). The first author (DLB) deductively coded this content to RCB traditional and professional outcome domains. Remaining interview content that did not fit into RCB outcome domains were analyzed inductively to generate four additional findings.

The first author (DLB) took several steps to ensure the integrity of this formative evaluation that she led, in partial fulfillment of entry-level OTD degree requirements. DLB is a CPERL alumnus, having sought out a mentored research opportunity as part of an honors undergraduate program of study. For two years, DLB was mentored to engage in funded translational research projects relevant to the OT profession, and she successfully designed and conducted an undergraduate honors capstone project that resulted in a refereed publication (Bosak, Jarvis, et al., 2019) and presentation at an international conference venue (Bosak, Kaelin, et al., 2019). This positive training experience made her inclined to explore how research and clinical spaces can bridge the gap between research and practice in occupational therapy. DLB pursued several strategies for ensuring the integrity of the formative evaluation process and results: (1) engaging DF and CPERL lab member SR to review the content and layout of main results, neither of whom have conflict of interest regarding the outcomes of the evaluation; (2) piloting the interview guide with SS, a CPERL member who has not been funded through the sponsored contract model; (3) using multiple data sources to triangulate the traditional outcomes; (4) engaging former lab members who may feel less inclined or pressured to report positive experiences; and (5) centering main analyses around a deductive approach using established frameworks.

Outcomes

Products of scholarly impact for research and practice in OT

Table 1 summarizes products generated by this sponsored contract to date, organized by RCB traditional outcomes and categories and inclusive of illustrative exemplars. Most traditional outcomes were KT products (53%), followed by publications (16%), extramural presentations (10%), federal grant submissions (10%), and community research partnerships (10%).

There is evidence of diversity within each type of product. For example, KT products took multiple forms, including the creation of wireframes for online summary reports, a user guide upgrade, instructional videos, tip sheets, and a podcast. All KT products supported the uptake of the Young Children's Participation and Environment Measure (YC-PEM) assessment in pediatric practice contexts. The

Table 1. RCB traditional outcomes.

RCB traditional outcomes	Outcome categories	N (%)	Illustrative exemplars
[KT] Products	YC-PEM User Guide, YC-PEM Report Wireframe, Video of Process to Develop YC-PEM Report, PEM + Report Wireframe, PEM + Strategy Exchange Wireframe, YC-PEM Clinician Tip Sheet, Video of Process to Develop Clinician Tip Sheet, YC-PEM Instructional Video, PEM + Instructional Video, Podcast of Partnering to Test YC-PEM Implementation	10 (53%)	'The syntax is with the measure on the CanChild website.' (T1) 'It's housed on the CanChild website, and it looks like there have been other videos that have been added in addition to mine relating and describing different aspects and different projects.' (T2) 'Now that video is on the knowledge hub, and I also think it's on the page about YC-PEM. When people go to search it, that's one of the first videos they see. I think it's a good marketing opportunity to be able to introduce people to this who might not be familiar with it or if they realize they have access to it, they can learn more about the tool.' (T3) 'We've been able to use this video in future phases of our work. Right now, the video is being used and talked about in the work for the AOTF PROSPECT trial.' (T3) 'We published it onto the CanChild website where anyone can download it and read through it before they decide to purchase the YC-PEM. I also use it in my OT class because we did design a handout for an electronic tool.' (T4)
Publications	YC-PEM Research Brief with CCTS, Protocol for PROSPECT, Best Practice for PEM Cultural Adaptation	3 (16%)	'It's one of my references for my capstone … They sent it out and next thing I know they sent a link that it was on their website. It's also [in] the PROSPECT paper[s]. It's also referenced there.' (T5)
Presentations*	Methodology to Develop YC-PEM Instructional Video, Best Practice for PEM Cultural Adaptation	2 (10%)	'I presented at the ILOTA conference in Fall of 2020, and that was a 90-minute short course.' (T3)
Community Research Partnerships	Blue Bird Day (BBD), Rocky Mountain Human Services (RMHS)	2 (10%)	'I collaborated with providers to understand what their feedback was related to the output so far of the wireframe.' (T2) 'Working with MK and working with CPERL is the idea that our projects are multifaceted and mutually beneficial for stakeholders and so the idea that creating that video and showing how that process in partnership between CPERL and our community partner at Bluebird Day, I think that's unique and special, and so I'm glad that we were able to translate that knowledge and disseminate that as well through that video.' (T2) 'CPERL worked and collaborated with Bluebird Day prior to me coming aboard. Then I helped to foster that relationship as well through my project and then I was offered a position there to work as a clinician after completing my project.' (T2) 'Parents were then able to give feedback and, in a way, we were teaching them about the constructs of participation before they took the tool. We found that when people watch the video then they have a better understanding about what participation is, what attendance is, and what involvement is before they take the assessment.' (T3) 'We then presented that video to a small number of caregivers from a therapeutic preschool that we have a connection with here in Chicago. They would watch the video, give feedback, tell me things that they like, things that they didn't like, and then we used the caregiver feedback to then update and create the final version of the script and the video.' (T3) 'We were in contact with a few people at Bluebird to help connect me to different caregivers and so they were able to connect me. I think in total we had four caregivers.' (T3) 'After I completed my first rough draft, I was able to get 4 service providers to go over the tip sheet and provide me feedback on it's general content, the layout, the aesthetics of it … They looked it over asked further questions about the YC-PEM that could be included onto the tip sheet.' (T4)
Grant Submissions	National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR), National Science Foundation (NSF)	2 (10%)	

Notes: YC-PEM = Young Children's Participation and Environment Measure; PEM+ = Participation and Environment Measure – Plus; CCTS = Center for Clinical and Translational Science; PROSPECT = Parent-Reported Outcomes for Strengthening Partnership within the Early Intervention Care Team; * = Extramural presentations only as reported on to funder.

YC-PEM is an evidence-based assessment that allows caregivers to communicate information regarding their child's current participation needs in valued activities (Khetani et al., 2015).

Similar to KT products, publications took multiple forms. These included a research brief about efforts to develop, validate, and implement YC-PEM within an early intervention service context and with the support of a community and research partnership (Sim et al., 2021), a protocol paper outlining the next step in this implementation research (Kaelin et al., 2022), and a commentary publication describing best practice methods for culturally adapting participation assessments like the PEM measures (Tomas et al., 2021).

Similarly, products were presented in diverse practice venues. The KT process for developing the YC-PEM instructional video was presented at the Illinois Occupational Therapy Association (ILOTA) conference, whereas best practice guidelines for PEM cultural adaptation were presented at the World Federation of Occupational Therapy (WFOT) Congress. As another example, two community research partnerships were cultivated with stakeholders in multiple states. Finally, two federal grant submissions were submitted to diverse funding bodies.

During lab document review, it was noted that trainees had earned lead or co-lead authorship on most traditional outcomes. Additionally, most instructional videos, publications, and presentations were co-authored by practitioners and/or co-branded with practice sites that had engaged in projects with trainees.

Building scholarly capacity for rising practitioners and scholars in health-related professions

Table 2 summarizes trainee perspectives of how the CPERL-*CanChild* sponsored contract has shaped their scholarly capacity, according to RCB professional outcomes. Trainees were primarily BIPOC and at various stages of pursuing OT career paths inclusive of at least one year of lab commitment. Trainees described (1) growing a research network, (2) acquiring research skills, (3) transferring research skills, and (4) assuming leadership roles.

Trainees reported working with at least one other colleague to design and conduct their funded project, including CPERL alumni who had previously worked on similar projects and individuals from different departments at UIC. All trainees collaborated with individuals who were associated with *CanChild* during the course of their projects.

Most trainees reported learning and gaining confidence in their communication skills, how to give and receive feedback, and an improved understanding of key concepts integral to the lab's research agenda. All trainees shared instances where they were able to apply newly learned skills to other projects and/or settings despite differences in chosen trajectories. For example, an OTD student shared how the acquisition of research skills facilitated her success in being awarded grant funds for a community organization for which she volunteered. A postdoctoral trainee shared how her experience inspired her to create syntax for an assessment measure she is developing to support reliable data analysis and interpretation.

Two trainees reported leadership roles they assumed during project completion. For example, the postdoctoral trainee co-mentored an undergraduate trainee, providing her an additional learning exercise into how to serve as a mentor. Additionally, an OTD trainee supervised and mentored an undergraduate trainee through a similar project that she had completed in the past, providing her with an experience in line with her career goal of teaching in an OT department.

Optimizations to maximize impact

Trainees offered three suggestions for improving the impact of the sponsored contract model, from the point of their onboarding through subsequent phases of work following project completion (see Table 3 for supportive quotes).

1. One trainee suggested greater education for trainees on the sponsored contract model that funded their training.
2. One trainee suggested a more formal way of disseminating the KT product to *CanChild* instead of through an email.
3. One trainee suggested creating opportunities for sustaining their involvement in subsequent projects that built on or were related to their KT product, while also recognizing that their limited knowledge might have prevented the availability of the opportunity.

Additional outcomes

All trainees offered their reflections specific to their motivations for and experiences when pursuing KT training in a research lab environment (see Appendix). All trainees mentioned personal motivations guiding their involvement in the sponsored contract (e.g. monetary funding, opportunity for challenge or being 'a part of something bigger'). Additionally, all trainees shared experiences about how the continuum of mentorship model in CPERL fostered a collaborative environment where they could 'fail forward'. Trainees also mentioned how their involvement in the KT projects affected their career trajectory and impression of research, such as by influencing how they appraise potential employers and how they can continue to be

Table 2. RCB professional outcomes.

RCB professional outcomes	T1	T2	T3	T4	T5
Growing a Research Network	'I got to meet from my engagement in research with MK and CanChild RT and DA. I got to know them, which is really fun actually because when it came time to buy stuff from CanChild and it took a long time for our PEM measure to come to us I was like I know someone that is there, I'll just e-mail RT and get her help.'	'The people who were part of my committee included a CPERL alum. She has expertise in visualization and design. SM has her expertise in knowledge translation. Obviously, MK and then AG who is head of program development currently at Bluebird Day. Then with the video specifically, because it is on CanChild, RT also consulted because she is the business and engagement officer there. I also sent her the deliverable for her approval and consult as well.'	'It was presented to my OTD committee … Each person had a different lens that they were looking at things for. MK was the participation expert, AS was the adult learning and health literacy expert, and then AG was the expert about pediatric practice and general rehabilitation … on the larger end … the initial idea was run past CanChild as something that would be worth developing and then all the work that goes into it in between and then to be able to present them the final product at the end.'	'I met with a CanChild engagement officer just to get an overview of what was needed on the tip sheet. I asked them what were recurring questions that other providers have asked of the YC-PEM. They also told me about the aesthetics of the tip sheets.' 'One of our CPERL alums was able to be part of my project. She was one of the service providers that gave feedback on my tip sheet.'	'MK got the opportunity to do it like to collab with CCTS which stands for the Center for Clinical and Translational Science at UIC. So we used this as a way to get PROSPECT out there while we were working on it or working on the paper.'
Research Skills Acquired	'I was aware of how the environment plays a role in the Abling and disabling process but getting into the nitty gritty about how do you actually capture it and then interpret that information or intervene on it and all that stuff was very new and I've definitely kept that with me throughout my career.'	'My confidence using technology has improved and using technology to further my practice' 'The translation of knowledge is something that I'll always keep pulling with me. The design and assistive technology aspect will always stick with me as well. Also, being environmentally focused. I'll bring all of that with me in my practice as I continue.'	'I had never written a research paper I had never been part of writing a manuscript to be submitted for peer review, I had never done that. I've been in an undergrad research lab for four years, but I was always on the side of doing the actual day to day. I was running the busy work and never doing the actual making posters and writing manuscripts. To be able to be part of that process and writing IRB's, helping to submit grants, the skills that I've learned are just unmatched and unparalleled to anything. As I talked to other people who completed the same program to me, I realized more and more how lucky I am that all of these skills are things that I've gained that others did not have access or opportunity to.' 'I gained the ability to be mentored and to be a mentor. I gained a lot of mentorship skills in this project and also through other people and phases of the product … I think that's something that I never want to undervalue because I've learned that it is a very unique experience in our research lab.'	'From working on the tip sheet I learned how to like communicate with stakeholders.' 'When I made the tip sheet and created those pictures, I was able to better understand the concept of participation isn't just for like adults or people who are able bodied … It gave me a different perspective on how to define participation and what it might look like to like everyone.'	'I learned attention to detail … I was able to learn more collaboration, like the skill of having an open mind and being open to the feedback that people give you … It's definitely a learning curve of how to receive feedback. It's not the same as writing an academic article or a paper for a class.'

Table 2. Continued.

RCB professional outcomes	T1	T2	T3	T4	T5
Research Skill Transfer	'As a person who's currently creating a measure, this project made me realize it's you're almost your due diligence not only make sure that the measure can reliably and consistently capture what it's supposed to capture, but can it also like get off the page consistently and reliably and be analyzed in a way and interpreted in a way that is reflective of what it's supposed to be capturing.' 'We recently launched a follow-up clinic for children after they leave the intensive care unit and the critical care attending was allowing me to have some say in our data collection. I wanted her to buy PEM and there is a little bit back and forth because participation still not well understood in the world of critical care, PEM is a lengthy measure which is foreign to critical care, there's a cost to it, and they're like, no, I just want to use a free measure. But the nice thing is that the measure is up on CanChild and it can be stored somewhere and updated. I mentioned that I know that MK is already working on thinking about racism as an environmental component and one of the social aspects that impacts us in our participation. I love that this measure is one that we know will continue to be improved upon. You also get a manual that already has the syntax out on it, so we'll know how to use the data easily. We did end up buying an institutional license for PEM specifically the PEM-CY.'	'When I was working with Bluebird Day, I remember a colleague asking a question on general technology regarding our website so that everyone in the company could see they were searching for information regarding a particular best practice for diagnosis and for interventions. There were folks giving tips, giving information from where they knew, and some of those were cited and referenced with publications. However, I knew that I can go to CanChild, I can look online and see on this website. I posted that link and I was able to find information regarding knowledge that was translated and backed. Something like that I would feel really confident providing that background for. I think the confidence in knowing where to access information and how to access information, whether it's through, CanChild or through scholarly journal searches things like that. My project has helped me to understand where and how to find that information.'	'To think about different opportunities and all these skills that I would not have had coming to CPERL to even just be familiar and exposed to them. Things like writing and grant. I never had written a grant before and then I volunteered for a non-profit and was part of a team that wrote a grant and got $6000 and even though it was two very different types of grants … Now I would not be intimidated to submit the manuscript to a journal, at least the submission processing I wouldn't be intimidated. Those things that I think a lot of people early in their career would be, you know, not have a lot of mentorships through or might be embarrassed to ask for help. I've gotten those initial skills in this position that I hope can serve me in the future.'	'I learned a lot about the YC-PEM through doing this and it's something that I've been working on a lot during my time lab. Now my second project is upgrading the YC-PEM, so getting to start by creating a project of developing a tip sheet to get an overview of what the YC-PEM is, that helped me a lot.'	'I think it was really helpful to get a general overview of all the timelines and stuff … If I didn't do the article and I just jumped right into my capstone I would have been a little lost. I would have forgotten the small bits and pieces of YC-PEM and PROSPECT. It was helpful in terms of my capstone to refer to it when I would get a little lost … After my capstone, also working on the aim 2 paper, it was helpful to be reminded of how YC-PEM started and where the lab sees it going. In terms of like writing my own Capstone write up it was also helpful. I would remember the feedback that they gave me or the smallest things about making sure that my references are all the same or they're in this specific order and I cited them right. I think those are skills that I got from that I was able to work on both on my capstone and the aim 2 paper.'
Leadership Roles	'It's made me someone who appreciates mentoring and teaching. It made me realize what that can give to science, to my science, and my trainees themselves. MK, built in this thing where she was mentoring someone and was like 'oh, you can co-mentor so I can like mentor you mentoring' which is brilliant idea and I was able to do that.'		'I was able to supervise another member of our lab who then created the tip sheet and I was able to serve as a mentor to her.'		

Table 3. Suggested optimizations.

Suggestions	Supportive quotes
1. Greater education on sponsored contract model	'I didn't think I realized how the funds came so I am now being either made aware or made aware for the second time how the contract came about, because that is unique and I think that's a nice idea and a good model for companies or people selling measures to maybe have or do or mode for keeping your measuring updated … I guess maybe depending on how the students supported and what their path is, maybe it could be a little bit more about explaining the where the funding came from or what it was for.' (T1)
2. Formal dissemination of KT product to funder	'I would have liked to have been able to present the final video to CanChild in a formal meeting to then be able to get their reactions right away 'cause we just like sent it to the email. It just felt very anticlimactic, it was just like oh I worked on this for six months, I've spent the past year preparing for it and then it just goes off in any way, but I think that is very typical. Just for me it would have been nice to have that connection.' (T3)
3. Opportunities for sustained involvement	'I think it would have been cool to be more involved in actually sending it out and then also knowing more about the podcast. I feel it would have been cool to know what the podcast was like … and how that relates to the article.' (T5)

driven to engage in and/or translate research in their clinical practice.

Discussion

KT is a strategy for building scholarly capacity in OT. To our knowledge, this is the first formative evaluation of an entrepreneurial funding mechanism to recruit and retain students to OT relevant research spaces with funded mentored training opportunities. Evaluation results suggest that both traditional and professional outcomes are possible through this model. Trainees suggest close consideration of the lab environment (e.g. lab values, expectations, context, etc.) when considering its scalability and offer several strategies to for maximizing its impact on trainee development. We discuss these case results to illustrate how funding can be restructured to mutually benefit the needs and interests of a funder, an academic research lab, and trainees.

Traditional outcomes made possible

Results demonstrate trainees can produce a diverse mix of KT and other published products. The value of certain KT products, such as peer reviewed publications and presentations, depends on the institution in which the academic research lab is housed, including incentive structures for its tenure-system faculty who typically direct these research spaces (Okokpujie et al., 2019). Nonetheless, there is clear benefit to trainees in engaging in such dissemination efforts, including contributing to the advancement of science and practice of OT. Furthermore, authorship provides an incentive for trainees to commit to training in a research lab, a way to promote positive mentoring relationships and scholarly collaborations and to motivate further research engagement (Eiswirth & Fry, 2022).

The traditional outcomes captured in this formative evaluation effort hinged on stakeholder engagement, which aligns with best practice guidelines for involving knowledge users as key components of KT to generate improved understanding and use of the knowledge generated (Jull et al., 2017). Specifically, two community research partnerships were involved in the sponsored

contract model. This finding suggests that the quality of community research partnerships may be more important to conducting these projects over the quantity, given the number of products produced relative to the number of partnerships. For other types of KT outcomes, web analytic data on product usage (number of views, downloads, etc.) could be used in future evaluation efforts to better ascertain impact.

Professional outcomes made possible and needing optimization for impact

All trainees in this evaluation described the value of building research relationships in conducting their projects. This finding aligns with prior studies about research relationships enhancing the development of research skills (Cooke, 2005) and social capital (Almeida et al., 2021). A recent study found that environments intentionally designed to generate relationship building and social capital among students, specifically among first-generation college students, can lead to increased academic achievement (Almeida et al., 2021). Although we did not systematically gather data on generational status, two trainees disclosed their first-generation status when interviewed. Professional networking within this type of training opportunity may provide unique value to first-generation trainees at early phases of their careers. Professional networking has benefits to the funder in that the quality of products produced may increase with the involvement of individuals in projects where their expertise and diverse backgrounds can inform project development. Professional networking also has benefits for the academic research lab in that it aligns with its strategic plan for creating a diverse, equitable, and inclusive research environment. One of these action steps includes collaborating with CPERL alumnae and scholars external to that lab (Children's Participation and Environment Research Lab, 2021).

Trainees reported gaining confidence in their skills (e.g. designing and managing research tasks, strengthening their understanding of core constructs of their profession, and how to give and receive feedback) and applying those skills inside and outside the lab (e.g.

shared products they created or learned about to support coursework, applying for grant funds to start new programming in their practice setting). This finding is consistent with the expectation that participation in research improves self-efficacy in doing research and promotes an evidence-based approach to practice (Roberge-Dao et al., 2019; Thomas & Law, 2013). Trainees with increased confidence and self-efficacy will therefore be more likely to use evidence-based tools in their clinical practice because of their greater understanding of the involved processes for creating these tools. This awareness can benefit research organizations like CPERL and *CanChild,* in that a good portion of their revenue and time commitment come from developing and disseminating evidence-based assessments and interventions. Indeed, trainees explained engaging with *CanChild's* resources and products after completing their sponsored training.

Trainee suggestions for optimizations pertained to professional outcomes. Two trainees described the positive impact leadership opportunities within their training experience, which might indicate room for improvement in order to engage more trainees. An important factor to consider is trainee readiness for assuming a leadership role in an academic research lab. Trainees who were provided with such leadership roles included a post-doctoral fellow and post-professional doctoral student, both of whom have committed to pursuing a role in higher education that requires mentoring skills. Trainees without this level of interest and/or readiness may require additional resources to prepare for assuming meaningful and mutually beneficial leadership responsibilities. Research labs can target graduate trainees for leadership roles in future contracts. Regardless, there may also be opportunities for further cultivating everyday leadership to support trainee readiness for larger leadership roles. This can include trainees educating each other on the sponsored contract model, creating standardized operating procedures (SOP) for presenting on created products to *CanChild,* or creating an SOP for sustaining engagement following project completion. A lab director may defer these optimization efforts back to trainees to empower them and gain efficiency in lab operations.

Contextual considerations

The results of this formative evaluation should be interpreted in light of contextual considerations. First, trainees were mostly female BIPOC trainees pursuing an OT career path. One trainee was not interviewed due to limited contact information but may have diversified the sample according to their chosen field of study, gender identity and disability status. Second, trainees commented on personal and environmental factors that shaped their training experience (see Appendix). Trainees also recognized how a dedicated lab environment based on a mentorship model may have supported them to achieve their traditional and professional outcomes. Trainees described benefiting from a lab ethos to acquire research skills in a positive work environment, negotiate project scope and timelines, and engage in formal and honest discussion surrounding how project involvement supports their career trajectory. Efforts to optimize and replicate this sponsored contract model will need to carefully consider trainee motivations, the qualities and realities of their academic research lab and institutional environments, and funder priorities.

Conclusion

The increasing emphasis of EBP and KT has produced curriculum designs that require teaching relevant research skills to persons earning entry-level professional degrees. Education programs may benefit from complementing their EBP coursework with mentored KT training experiences in research spaces. Combined training might best prepare students for acquiring knowledge, skills, and habits for serving the roles of evidence-based practitioner and knowledge translator. Findings suggest this sponsored contract model can yield scholarly products and professional benefits to trainees across multiple backgrounds, health-related professions, and chosen career trajectories. Stakeholders could consider increasing leadership opportunities for graduate trainees to maximize its impact.

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Appendix. Factors and effects of training.

Factors and effects of training	Illustrative exemplars
Personal Factors and Motivations	'My primary motivator was the funding … I remember I was in between my post doc ending and then having my next post doc and this was an opportunity to help cover my efforts so I could continue to live in between positions … It gave me not only like a chance to help me get from one job to another so that way I didn't have to be destitute in between things but the other half of it is I love data.' (T1)
	'That video was a way to challenge myself to disseminate information in a way that I would have not known one how to complete or how to do and two how useful it would be or how beneficial it could potentially be to those accessing it.' (T2)
	'The motivation is feeling as if you're a part of something bigger. It is nice to think that something like CanChild that is a well-respected organization and that has all this amazing research and well respected within the participation community … but then to be able to determine where my own personal passions were and then be able to build upon that.' (T3)
	'What motivated me is that I wanted to do something occupational therapy focused 'cause I knew in undergrad I wanted to do OT … While getting oriented during that year, I was very curious about everything … So, I guess that's what's kind of motivated me' (T4)
	'It was the first part of being part of the lab and applying the knowledge that I was learning into something that was a little bit more tangible and less just like notes on a notepad kind of a thing' (T5)
Environmental Factors	'What I liked about it was it had like an energy of anything is possible and I'm going on to bigger and better things … . I think that's because of having so many students in the lab which is really nice … . The environment was one that was ok with failure and talking about failure, hiccups and what's going on … It was a humble environment with that same sense where we could admit to having problems and recognizing there's no shame in the struggle. It was an environment of it's great to learn together and to fail forward.' (T1)
	'It's [the lab] kind of like a like a brain. It's the place where, great minds come and are challenged to think outside the box, but also for a big picture experience too. It's unlike any place I've been before. I get hints of it in other places and aspects, but I think the lab itself fosters innovation and collaboration. At the same time, you are a contributing member of this environment, where you need to be self-driven, since you have the freedom to be independent while contributing towards that bigger picture. The lab itself pulls together people who have different backgrounds, but all have an aspect towards that bigger on their own trajectories that they probably would have been on anyway and then the lab kind of fosters that growth in a mutually beneficial way. It's a place that I matured a lot as a clinician, as a student, as an adult.' (T2)
	'In the beginning with MK and with that mentorship, with our continued mentorship throughout, I think really helped me to stay on track and make adjustments in the timelines.' (T2)
	'CPERL overall is a very welcoming place where people are encouraged to be creative, inquisitive, and courageous. Our lab is based on this mentorship model, and it's encouraged from day one be willing to ask questions, be willing to say I don't know how to do this … In other environments there's a lot that go into seniority or a very hierarchical structure where I think in CPERL we really try to value that everyone is on this level playing field … We like to have fun, we like to be a place where we can just chat, but then those chats turn into meaningful conversations that can then lead to different things in our lines of work … I think our environment is built upon being together, being around each other, and that was hard during COVID to not have that environment … those indirect interactions make such a big deal.' (T3)
	'The whole continuum of mentorship is something that's so important and valued to everyone in our lab. It comes to light when you look at the CanChild sponsored contract, because all of those project's feed into each other and it's a natural continuum.' (T3)
	'I learned from a lot of the members here at CPERL, and we're all at different stages in our careers, so it's nice to see a little bit from everyone and learn from their experiences. We have a fail forward perspective in our lab. Not everything has to be perfect … and it's through our mistakes that we learn … I like the culture that goes around it, too … I also like that we're a BIPOC majority lab. I've never been to another research lab this is my first research that I've been involved in, so getting to see the diversity in our members and they're different career paths that they're in right now … I get a little bit of everything here.' (T4)
	'I would say collaborative in the sense that we work together, but we also learn from each other, so it's not like, if you've been here longer, or if you're in this certain stage of your career it doesn't necessarily mean that they can't also learn from the newer members. There's a big emphasis on teamwork and collaboration.' (T5)
Effects on Career Trajectory	'If I didn't have my time in CPERL because that was my only lab to have that kind of traditional lab team environments, I wouldn't have known how awesome that can be … It has made me wants to have students and to have that kind of team environment.' (T1)
	'Working with a lot of different places and a lot of different kind of community partners allowed me to understand that each place has a different process of care and different experience. It taught me to look at those processes and see how and where they can be optimized and how to contribute. If the place you're working is open to that and fosters a culture of that … Working with CPERL has helped me to feel confident in being able to contribute to the quality improvement process, but also to really search for a place of employment that is kind of innovative and expanding and open to change.' (T2)
	'I am very proud to think that I now have a defined story and I really identify as both a clinician and a researcher … I have two separate things and they're able to combine my expertise and both make me better at the other job, but it's been great to see my identity blossom and expand through working in the lab.' (T3)
	'It's given me the tools to think about how to challenge myself in other aspects and where I want to go. As of right now, I am intrigued in becoming part of an OT education program … I think the tools that I've learned in CPERL have changed how I would want to be a teacher, how I would want to mentor students, and how I would want to be that person for them like MK was to me.' (T3)
	'Right now, I'm still deciding on where I want to go, just 'cause the field of OT is so broad … I feel research has or CPERL in general has equipped me with these skills to know what it means to use evidence in practice and why it's important.' (T4)
	'It's strengthened up my passion to be an OT. It has made me more sure that OT is what I wanted to do and specifically an OTD is something that I wanted to pursue.' (T5)

(Continued)

Appendix. Continued.

Factors and effects of training	Illustrative exemplars
Effects on Trainees Impression of Research	'Research gives you an opportunity to be surprised of what you can learn and do, and it gives you a chance to push yourself and to feel like proud with yourself … It allows you to get to know your fields and your evidence base in a deeper way and have a better understanding of what you do and why you do it … Research, I feel is your chance to be a superhero with numbers … and words.' (T1)
	'Research is something that I am driven by, and I want to be continued to be driven by. It's something that I seek out through different resources and it's something that is important for me to understand. It's also something that helps to guide my interventions as an OT and then the term of a research informed clinician was something that in lab MK and I kind of discussed like I hope to be able to contribute … continue to contribute to growing research in my field of study whether it's through things like this, through consulting and sharing my experience, or being a catalyst for change within an organization to contribute to research or to adopt research based and evidence-based tools and so research is very important to me.' (T2)
	'I like to think of research as this contact loop. We talk about the scholarship of practice model here at UIC, where we have research and then we're able to use research to then inform practice and then practice is informing research. So I think of it as this general hub that not only informs our practice but that can also be informed by practice, so the general spark for so much that we do.' (T3)
	'Research means not knowing all the answers to everything but pushing through to get to find what you're looking for. By pushing forward, you're going to make mistakes and research … it's normal for that to be in research.' (T4)
	'Research to me will be having to work as a team, having a mentor, and having people alongside you to help up with your research … I guess in general it's being creative, asking questions, and making sure that what you're researching is something of value, and it's not just to put your name out there … It's something that you're interested in and you want to learn more about that would hopefully benefit the field that you're researching in.' (T5)
	'I never had research experience so when someone told me, researcher lab, I would automatically think white lab coat, beakers, and stuff like that. Being in CPERL, it changed my perspective of research and maybe this is something that I could be interested in. It made me understand more that research is critical for fields such as OT … You're always continuously learning, and that's something that I like to do. My research gave me that opportunity to continue learning even about things that I've never even heard about before.' (T5)