Academic Exchange Program

Research Collaboration at Bond University: Advancing Systematic Review Methodologies

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Introduction

As part of the Evidence Informed Fellowship through the Pandemic Evidence Collaboration, I undertook a research exchange from the University of Calgary, AB, Canada to Bond University, QLD, Australia. This collaboration provided an opportunity to engage with Dr. Oyungerel Byambasuren's research team at the Institute for Evidence-Based Healthcare (IEBH) and explore innovative methodologies in systematic review processes. The exchange facilitated knowledge transfer between institutions and contributed to advancing evidence synthesis methodologies.

Research Presentation and Collaborative Discourse

During the exchange, I presented my doctoral research examining the mental health implications of COVID-19 on visible minority non-health essential workers. The presentation generated substantive academic discourse with the IEBH team, including Dr. Byambasuren and her PhD student Hannah Greenwood, Dr. Mark Jones, and Professor Tammy Hoffmann. The interdisciplinary feedback I received provided valuable perspectives on methodological approaches and highlighted potential avenues for future research collaboration. The exchange has reinforced the value of cross-institutional knowledge sharing in addressing complex research challenges and developing innovative solutions for evidence-based practice.

> *The research collaboration focused on the intersection of traditional systematic review methodologies with emerging artificial intelligence technologies, representing a significant advancement in evidence-based research practices.*

Throughout the exchange, I engaged in multiple one-on-one sessions with Dr. Byambasuren, during which we discussed in-depth aspects of my research methodology, potential improvements to my systematic review approach, and opportunities for collaborative research initiatives. These sessions provided invaluable mentorship and guidance that significantly enhanced my understanding of advanced evidence synthesis techniques.

SR Accelerator: Technological Innovation in Evidence Synthesis

Collaborative research session at Bond University, discussing systematic review methodologies and the application of artificial intelligence in evidence synthesis processes.

A principal component of the exchange involved comprehensive examination of the SR Accelerator tool developed by the IEBH team at Bond University. This innovative platform represents a significant advancement in systematic review methodology, addressing the time-intensive processes that traditionally characterize evidence synthesis. The tool incorporates multiple functionalities designed to streamline various stages of systematic review conduct.

The IEBH team provided me with comprehensive resources regarding the tool, including documentation materials, recorded workshop sessions, and testing protocols. During the exchange, I examined these materials extensively and participated in detailed one-on-one discussions with Justin Clark, the lead developer of the program, regarding the tool's utility compared to existing systematic review software solutions available in the academic market. Additionally, I discussed the tool's potential implications for my research with Associate Professor Dr. Mark Jones, a biostatistician on the team.

LLM-Based Screening Technology

Of particular significance was the opportunity to evaluate the beta-level Large Language Model (LLM)-based screening component integrated within the SR Accelerator, called MechaScreener. This artificial intelligence application addresses one of the most time-consuming aspects of systematic review methodology—the initial screening of literature. The technology demonstrates considerable potential for accelerating the screening process while maintaining the methodological rigor required for systematic reviews.

Academic and Professional Implications

This exchange experience has contributed significantly to my understanding of contemporary developments in systematic review methodology. The exposure to innovative technologies and collaborative research approaches has enhanced my perspective on evidence synthesis practices. The professional relationships established during this exchange are anticipated to facilitate ongoing collaborative research efforts and contribute to future academic endeavors. The interdisciplinary nature of the collaboration exemplified the importance of international academic partnerships in advancing research methodologies. This visit was pivotal for my doctoral research trajectory, and the insights gained will inform my subsequent work.

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This academic exchange was facilitated through the Evidence Informed Fellowship program, Pandemic Evidence Collaboration, Oxford's Kellogg College. The collaboration represents ongoing efforts to advance systematic review methodologies through international research partnerships.