

Faculty of Engineering and Applied Science
Chemical Engineering Seminar Series



Supporting the Whole Engineer: From Principles to Practice in Transdisciplinary Engineering Education

Dr. Lydia Wilkinson/University of Toronto

Thursday, October 14, 2021, 2:30pm

Dupuis Hall Room 215

Humanities integration in engineering curricula can move students closer to a transdisciplinary problem-solving mindset, helping to equip them with the ancillary skills that will support success within our complex sociotechnical environment. This type of engagement exposes students to the challenges and opportunities afforded by interdisciplinary teams, while encouraging them to think in new ways and expanding their problem-solving strategies to include broader concepts and epistemological frameworks. In turn, a range of related benefits develop from new modes of thought and a more expansive knowledge base; by engaging with the liberal arts students become more culturally aware, value inter- and cross-disciplinary collaborations, have stronger communication skills, are better lifelong learners, and develop a deeper understanding of and ability to analyze the impact of engineering on humanity and society [1-8]. These types of transdisciplinary competencies – skills that can be developed and used within and between disciplines – help to prepare students to navigate future challenges. A useful metaphor for the development of these outcomes is that of academic cross-training: these tangible skills, as well as familiarity with new modes of inquiry and subject matter frameworks developed through immersion in the liberal arts can help students in science and engineering perform better within their disciplinary focus.

In this seminar, Lydia Wilkinson, Assistant Professor in the UofT's Institute for Transdisciplinary Engineering Education and Practice, will discuss her research on the impact of Humanities opportunities on undergraduate engineers, situating her observations on their experience at four Humanities sites within the longer history of liberal engineering initiatives. She will discuss how she applies principles from this research to her current work developing integrative transdisciplinary learning opportunities within the Chemical Engineering department at UofT.