CEEA-ACEG 2022 – Sunday Workshop Series

	Teacher Journey (A)	Design (B)	Shift to Social Good (C)	Society & Engagement (D)
1. *60 min 9-10am*	Transforming first-year engineering	Differentiating and Appreciating Constraints and Criteria in Engineering Design – a Large Classroom Experiential Learning Activity	The Effects of Societal Perceptions of the Engineering Profession on Prospective Engineering Students	Coordinating an Ontario-wide network to support Indigenization and Decolonization in Engineering
2. *90 min 10:30am-12pm*	Implementing Competency Based Assessment in Engineering	Experimenting with *Concept-Space* in a Small Design Project and Learn How to Leverage the Strengths of this New Online Graphical Workspace for both Teacher and Learner	Voices from the Heart: A trauma-informed and wisdom-inspired approach to exploring innovation in engineering education	Conversations on Introducing Indigenous Ways of Knowing in the Engineering Curriculum
3. *90 min 13:15-14:45*	Towards a more scholarly teaching practice: making navigating teaching portfolio conversations easier	First-year project-based engineering design courses – now and in the future.	Leveraging Interdisciplinarity: A workshop for engineering educators	An Engineering Educators Guide to Establishing a Global Classroom
4. *90 min 15:15-16:45*	Improving the Lecture: The Application of Cognitive Science to PowerPoint	Reimagining Student Learning through Empathetic Design	Mending Engineering: A Workshop to Start Radically Repairing Engineering's Relationship with the Rest of the World.	How to Be a Tech Steward

Session Details

Session	Title and Learning Outcomes	Facilitators
A	**Teacher Journey**	
1.	**Transforming first-year engineering** *Learning Outcomes* • Discuss transforming a course or a program from traditional to active learning: challenges and opportunities • Identify and apply exercises to help students with self-assessment, self-awareness, and self-development	Yani Jazayeri, Kim Johnston, Mike Potter, Emily Marasco, *University of Calgary*
2.	**Implementing Competency Based Assessment in Engineering** *Learning Outcomes* • identify the key elements of Competency Based Assessment, and • implement them into a learning module.	Sean Maw, *University of Saskatchewan,* Brian Frank, *Queen's University,* Joel Frey, *University of Saskatchewan*
3.	**Towards a more scholarly teaching practice: making navigating teaching portfolio conversations easier** *Learning Outcomes* • Distinguish between the concept of student learning vs. student experience • Identify and describe challenges in their teaching practices • Reflect on and demonstrate the challenges in a collaborative way (with peers) • Apply the principles/ideas/feedback emerged from conversations in future practices • Implement tools to compile a more authentic teaching portfolio	Monica De Paoli, Robert Fleisig, Andrea Hemmerich, *McMaster University*
4.	**Improving the Lecture: The Application of Cognitive Science to PowerPoint** *Learning Outcomes* The goal of this workshop is to be a "why-to" guide as well as a "how-to" guide for improved PowerPoint in the classroom. The workshop will introduce participants to several cognitive theories (e.g., cognitive load, dual-channel theory, etc.) and then demonstrate how the theory can be applied to an existing example slide from an engineering classroom. Next, working in groups, participants will have the opportunity to apply the theory to their own slides. The objective of this workshop is not to simply provide generic slide design rules, but rather to show that by following cognitive theories, we can produce better slides with reduced cognitive load, which can lead to improved learning outcomes.	Jeff Paul, Jillian Seniuk Cicek, Renato Bezerra Rodrigues, *University of Manitoba*

	Please bring your own laptop and slide decks to the workshop for use during group work. If you do not have slides you are willing to share, the facilitators have plenty of examples for you to practice on. Alternatively, if you are willing, please feel free to send slides to us ASAP if you'd like them to receive a cognitive makeover, and we will highlight them during the workshop.	

B	Design	
1.	Differentiating and Appreciating Constraints and Criteria in Engineering Design – a Large Classroom Experiential Learning Activity *Learning Outcomes* • Modify an experiential learning activity to help students differentiate between, and recognize the importance of constraints and criteria in the design process. • Recognize common opportunities for student learning during this activity, and connections to other stages of the design process. • Generate and approach to adapt the activity to different year levels and engineering disciplines.	Stephen Mattucci, Ryan Clemmer, Andrea Bradford, Bob Dony, *University of Guelph*
2.	**Experimenting with *Concept-Space* in a Small Design Project and Learn How to Leverage the Strengths of this New Online Graphical Workspace for both Teacher and Learner** *Learning Outcomes* • Learn the pedagogical foundations of concept-space, how it can improve learning, teaching, and multidisciplinary design teamwork • Experiment with concept-space in an engineering project and gain sufficient experience to integrate it where it will have a positive impact on learning • Experiment with concept-space as an evaluator and learn how to use it to better understand a team's design process and the contributions of individuals.	David Foley, Fannie Joly-Emond, Université de Sherbrooke
3.	**First-year project-based engineering design courses – now and in the future.** *Learning Outcomes* • Discussion of challenges in design, development, and delivery of first-year integrated design engineering courses. • Identification of elements necessary for the future of first-year engineering design courses. • Development of strategies for improving course design now and in the future.	Shelir Ebrahimi, Elizabeth Hassan, *McMaster University,* Cameron Farrow, John R. Donald, *University of Guelph,* Marnie Jamieson, Janice Miller-Young, *University of Alberta*
4.	**Reimagining Student Learning through Empathetic Design** *Learning Outcomes* • Use empathetic design, including interviewing and prototyping, to better understand another person's learning experience; • Recognize/identify mindsets that support empathetic pedagogical design; • Discuss the value of engaging with students using an empathetic design approach.	Robert Fleisig, Andrea Hemmerich, Monica De Paoli, *McMaster University*

C	Shift to Social Good	
1.	**The Effects of Societal Perceptions of the Engineering Profession on Prospective Engineering Students** *Learning Outcomes* • To explore societal perceptions of the engineering profession and ideas held by the public about engineers. • To determine why young people are drawn or repelled by the study of engineering, and if society's perception of engineering affects the quality of prospective students. • To develop ideas and methods with which engineers and educators can better influence society's perception of engineering in order to attract more suitable prospective engineering students.	Fidel Labit, *Engineer-in-Residence at University of Toronto*
2.	**Voices from the Heart: A trauma-informed and wisdom-inspired approach to exploring innovation in engineering education** *Learning Outcomes* • Experiencing the creative potential of intention setting, embodied practices, and circles • To surface voices that have been suppressed • To generate new visions and pathways for enhancing engineering education	Kai Zhuang, *Brave49,* Dimpho Radebe, *University of Toronto*
3.	**Leveraging Interdisciplinarity: A workshop for engineering educators** *Learning Outcomes* • Articulate and explore disciplinary backgrounds, knowledges, and experiences, and how these inform conceptions of engineering and approaches to engineering education; • Identify disciplinary boundaries and intersections to empower these spaces and generate collaborative interdisciplinary opportunities; • Collaborate on an interdisciplinary initiative (e.g.,project, course, class, or learning activity).	Rebekah Bennetch, *University of Saskatchewan* Jillian Seniuk Cicek, Renato Rodrigues, Kari Zacharias, *University of Manitoba* Laura Patterson, *UBC* Chantal Rodier, *University of Ottawa* Janna Rosales, *Memorial University* Lydia Wilkinson, *University of Toronto*
4.	**Mending Engineering: A Workshop to Start Radically Repairing Engineering's Relationship with the Rest of the World.** *Learning Outcomes* • identify the implicit values, methods, and tools that are part of an act of "mending", and how they relate to sustainability and social good. • apply ideation techniques to generate approaches to incorporating the values, methods, and tools of mending in their own Engineering practice. • identify opportunities to include non-traditional pedagogical methods in the Engineering classroom.	Matt Borland, Kate Mercer, Jenny Howcroft, Matt Robichaud, Alexi Orchard, Shannon Veitch, *University of Waterloo*

D	Society & Engagement	
1.	**Coordinating an Ontario-wide network to support Indigenization and Decolonization in Engineering** This workshop is a platform to launch the Ontario-wide network to support Indigenization and Decolonization in Engineering. The overarching goal of is to connect initiatives across multiple institutions. Overall, this initiative is ruled by the philosophy of, "nothing about us, without us", involving collaboration and consultations with Indigenous people. Participants will engage in a discussion and develop a plan of how to move forward with this network.	Brian Frank, *Queen's University* Jane Goodyer, *York University*
2.	**Conversations on Introducing Indigenous Ways of Knowing in the Engineering Curriculum** *Learning Outcomes* • Engage in conversation with indigenous voices. • Appreciate different indigenous stories as way of learning the indigenous world view. • Explore and develop authentic and respectful ways of introducing indigenization to engineering curriculum as a mechanism to complement the western world view.	Nadine Ibrahim, *University of Waterloo,* Kathryn Atamanchuk, *University of Manitoba,* John Donald, *University of Guelph,* Christine Moresoli, *University of Waterloo*
3.	**An Engineering Educators Guide to Establishing a Global Classroom** *Learning Outcomes* • Identify limitations and obstacles in establishing global classrooms and devise strategies to overcome them. • Categorize various tools and recourses and will map how they can be used to support and build a global classroom. • Formulate and articulate ways to incorporate virtual global student teams into their courses. • Identify institutional resources and international partners and work together to develop global classrooms and inclusive learning opportunities.	Elham Marzi, Anuli Ndubuisi, Philp Asare, *University of Toronto*
4.	**How to Be a Tech Steward** *Learning Outcomes* Participants will: • Learn about the concept of technological stewardship, the value of tech stewardship for engineering education, and the Tech Stewardship Practice program materials. • Learn how tech stewardship has been integrated in different curricular and co-curricular contexts. • Explore how tech stewardship could be implemented in their own contexts.	Mark Abbott, *Engineering Change Lab*, Fenella Amarasinghe, *Ryerson University,* Jeff Harris, *York University,* Janna Rosales, *Memorial University,* Kari Zacharias, *University of Manitoba*