

CEEA-ACÉG Saturday Institute Workshop

Institute facilitators

- Susan McCahan, University of Toronto
- Lisa Romkey, University of Toronto
- Robyn Mae Paul, University of Calgary
- Jillian Seniuk Cicek, University of Manitoba
- Marnie Jamieson, University of Alberta

Specific learning objectives

Introduce participants to a research design using an interactive and flexible card-based activity. By the end of this workshop, participants will be able to:

- Identify the key elements of a well-designed research study.
- Recognize important conceptual frameworks and research paradigms in engineering education research.
- Draft a research study design that can be used to secure funding, or serve as a project proposal.
- Justify the choices that have been made and the overall alignment of the research design.

Overview of participatory learning activities

The workshop will include individual and group activities and discussions on designing engineering education research studies. After each part of the research design process is introduced, there will be a short group discussion to foster a shared understanding of the concepts. This will be followed by time to work both individually and in groups on the design of a research project. In the afternoon, there will also be an opportunity to receive one-on-one assistance with their study design, and work with the facilitators to draft a study plan. The facilitators will provide advice on turning your idea into a funding proposal.

Institute workshop description

In this institute participants will walk through the steps necessary to create a high-quality research study plan. The workshop utilizes a unique Engineering Education Research (EER) card deck developed by the facilitators. The cards include research questions, exploration of theory and conceptual frameworks, and an introduction to a range of methodologies. This approach ensures your research study has the necessary grounding in theory as well as supporting the development of a well-aligned plan. The cards introduce participants to some of the most common research paradigms and conceptual frameworks used in EER currently. The facilitators will introduce each step of the research design using the cards, and actively work with the

participants as they develop their plans. Participants can come with an idea already in mind or brainstorm ideas for a new direction in their research during the institute. In the afternoon, participants will have the opportunity to get one-on-one advice on their research design, receive critiques from other participants, and learn how to turn their plan into a more complete research study that can be used to apply for funding, or serve as a project proposal. This will include identifying next steps and resources, for example: literature search strategies, budgeting considerations, and strategies for finding the necessary expertise and resources needed for the project.

This workshop and card deck are designed for participants engaged in a range of engineering education research types, from improving something in your own teaching (i.e., Scholarship of Teaching and Learning) to exploring broader questions about the nature of engineering education. Faculty, staff and students are all welcome and encouraged to participate. This workshop serves as an introduction to engineering education and can also offer a refresher and supported working block for those with experience who are starting a new project.

Workshop timeline

8:00-9:00: Breakfast

9:00-10:00: Introduction to Engineering Education Research, formulating a research question, and common theories. After an introduction to each topic, participants will work with the research cards to acquaint themselves different types of questions and theories and start to build a research plan.

10:00-10:30: Break & Networking

11:00-12:00: Introduction to conceptual frameworks and methodologies. Again, participants will work with the cards and add their own to continue to build a complete research plan.

12:00-1:00: Lunch & Networking

1:00-2:00: Complete a full research plan and iterate to align it. Participants can work individually or in groups. This session will include consultation with experts and a showcase to get feedback from other groups and participants.

2:00-2:30: Break & Networking

2:30-3:30: Turning the plan into a proposal. How to formulate a proposal to submit for funding, or for a student project plan. Identifying steps and resources, for example: literature search strategies, budgeting considerations, and necessary expertise and resources needed for the project.