

**CODING,
COMPUTATIONAL
MODELLING,
& EQUITY
IN MATHEMATICS
EDUCATION**

SSHRC CRSH Callysto
FIELDS Western University Brock University

PD Day & Symposium
April 26, 27-29, 2023

Face-to-Face at Brock University

We are pleased to collaborate with the [Fields Math Ed Forum](#), and live-stream our discussion panel, titled "*Mathematics Education incorporating Coding: Practical Challenges and Opportunities*", chaired by Prof. Dame Celia Hoyles (England), with panelists: Dr. George Gadanidis (Canada), Dr. Oh Nam Kwon (Korea), Dr. Simon Modeste (France), and Dr. Elena Prieto-Rodriguez (Australia), with a reaction by Dr. Richard Noss (England).

There is no fee for attending this discussion panel in Zoom. However, registration is mandatory [\[click here for your registration\]](#). Every other part of the symposium is in-person only.

Online proceedings (on this website) will be available at the end of 2023.

Mathematics Education incorporating Coding: Practical Challenges and Opportunities

Abstract:

Coding or programming is ubiquitous across the world. But what coding means, how it is learned and developed and how it is exploited as a tool to explore topics in different subject areas varies enormously across jurisdictions: for example, coding can be introduced and developed as part of a school computing curriculum, as part of the school mathematics curriculum or more informally within out-of-school clubs. These different structural organisations inevitably serve to define what happens in practice in schools, shapes how students develop coding skills and learn key coding concepts, informs how teaching might be enhanced through coding, and ultimately how coding might be exploited outside of computing as a tool to think with and explore mathematics.

This panel will touch on some these issues with a particular focus on the interactions between mathematics and coding *in practice*. The discussion will aim to tease out the challenges, risks and opportunities of integrating coding into mathematics classrooms while addressing questions such as: Why should coding be incorporated mathematics classrooms? What is the specificity of coding in mathematics and the links between coding and mathematics? What can coding bring to mathematics in terms of new content or new ways to support mathematics teaching and improve learning? Which mathematical topics are most aligned to the incorporation of coding and why? What are the links between coding and algorithmics, applied mathematics and reasoning?

The panel will comprise a chair and four invited panelists from four different countries with different curricular structures. It will conclude by a reaction, titled '*Past, Present, and Future: 1980s – 2020s – 2050s*'.



Prof. Dame Celia Hoyles (Panel Chair), England



Dr. George Gadanidis (Panelist), Canada



Dr. Oh Nam Kwon (Panelist), South Korea



Dr. Simon Modeste (Panelist), France



Dr. Elena Prieto-Rodriguez (Panelist), Australia



Dr. Richard Noss (Reactor), England