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**Plenary Lectures**  
**Conférences plénières**

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**DANIEL COOMBS**, University of British Columbia  
*Real-time modelling of the Coronavirus epidemic*

The COVID-19 global pandemic has led to unprecedented interest in mathematical modelling as a tool to understand the dynamics of disease spread and predict the impact of public health interventions. I will talk about how different kinds of mathematical and statistical tools have been used to build our understanding of different aspects of the epidemic as it has progressed, with particular reference to the evolving situations in British Columbia, and in Canada as a whole.

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**JIM FOWLER**, OSU  
*Moving the Ross Mathematics Program to an online format*

The Ross Mathematics Program is a six-week residential mathematics program for advanced high school students, and has run every summer since 1957. For Summer 2020, the Program was moved online. In this talk, we'll discuss the online platform "Circle Z" which was created to facilitate the transition. Circle Z integrates TeX-based chatrooms, audio chat via Mumble, various video and livestreaming solutions (Zoom, Twitch, Douyu). Each problem set is a real-time collaborative TeX editor, where students and the graders can collaboratively edit a document. The talk will reveal the current platform and suggest where such technology might be headed.

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**STAN MATWIN**, Dalhousie University  
*Privacy at the Time of the Pandemic*

There are three approaches to bound  $R_0$ , the reproduction number driving the most common models predicting the number of COVID-19 cases: vaccine, herd immunity, and testing followed by tracking and tracing. Scalable and reliable track-and-trace systems must be based on technological, rather than manual means of collecting information about contacts between humans. In this talk, we will outline the leading designs of track-and-trace systems based on the Bluetooth proximity tracing technologies. Our focus will be on privacy aspects of these systems and their utility for health authorities. We will present three design principles on which, in our opinion, the public should insist to protect the modicum of personal privacy, while at the same time enabling track and trace tools that may be necessary in an epidemiological crisis. We will briefly mention the technical and algorithmic means that could be used to guarantee that these principles are followed by a given system.

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**PAULINE VAN DEN DRIESSCHE**, University of Victoria