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*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.