CWRUded IRB Inquiry

My name is Jacob Alspaw and I am a soon to be graduate of Case Western Reserve University. I've put together an interesting service, called CWRUded (pronounced crowded) that I would like to introduce to you and other IRB representatives.

On April 30th, 2019, I met with a few CWRU stakeholders (including UTech, Police, Compliance, and Library) and presented my idea for a mobile application. The CWRU stakeholders and I thought it would be appropriate to reach out to the IRB and ensure we are following all of the in-place regulations.

Waiting sucks. Nobody likes walking into an overly-crowded place, whether it's a gym, library, or dining hall. It is an inconvenience when Kelvin Smith Library has no seats, the dining halls are packed and every table is taken, and there's no room in the gym to do your workout. When these places are busy, students cannot accomplish the tasks that made them visit in the first place.

CWRUded is a service that allows its users to gauge how busy campus buildings are in real-time, saving them from the inconvenience of arriving to a campus building only to find that it is packed. CWRUded will enable its users to "know before they go" and aims to improve upon student-life by allowing students to plan their day most productively. For example, postponing a trip to the library if no study space is available. Simply put, the service aggregates the number of devices connected to the CWRU wireless network within a defined location. The number is then compared to an expected maximum which allows us to resolve a "busyness" rating.

The data acquisition process is simple, efficient, anonymous, and secure. The UTech network administrators have put together an automated polling process that will handle the sensitive requirements of the CWRUded application. The have grouped wireless access points around campus and intermittently request how many devices are connected to each group. Each group can be thought of as a location on campus. For example, the group that represents the first floor of the Kelvin Smith Library would consist of all of the wireless access points in the general area. The results are collected and then sent to the server that hosts the CWRUded application.

Measuring the number of users in a general location through the use of a wireless network can be unreliable. Getting the exact number of individuals within a defined location is nearly impossible. The data acquisition process requires network users to be actively sending data through the network at a nearby wireless access point. The nice thing about the CWRUded service is that it is not reliant on obtaining exact measurements. Instead, estimates are good enough to measure how busy a location is. The service just needs to compare the estimated number of devices to a predetermined expected number of devices. If the comparison shows that an increased number of devices were found, then we can say that the location is busy.

All data retrieved by the CWRUded service is anonymous. CWRUded and the data acquisition process are not concerned with who is at a location, but rather how many people are at the location. None of the data that we collect will associate an individual or their devices to a location. For example, the data acquisition process will tell CWRUded users that the first floor of the Kelvin Smith Library currently has 500 devices online. This is the full extent of the data being collected; a location is paired with a count of devices. CWRUded will not track the movements of individuals around campus, ensuring that all campus-wireless users remain anonymous.

In February, I met with the heads of CWRU network security and network infrastructure and the lead facilitator of marketing in UTech. During the meeting, I proposed a close relationship with the UTech network engineers to acquire the anonymized data that my service requires. Since then, I have been working with UTech on the technical aspects of the application and we have finally put together a near working proof of concept. I have finished the development of my application and its server while the network engineers have worked out the data acquisition process.

In order to move forward, the CWRU stakeholders from UTech, Police, Compliance, and Library have asked me to pursue a formal agreement between CWRU and myself. In order to proceed with the formal agreement, the stakeholders have also requested that I receive IRB approval. Will this application meet IRB standards?