

# Safe Blues: Emulation of Epidemics via Virtual Safe Virus-Like Tokens

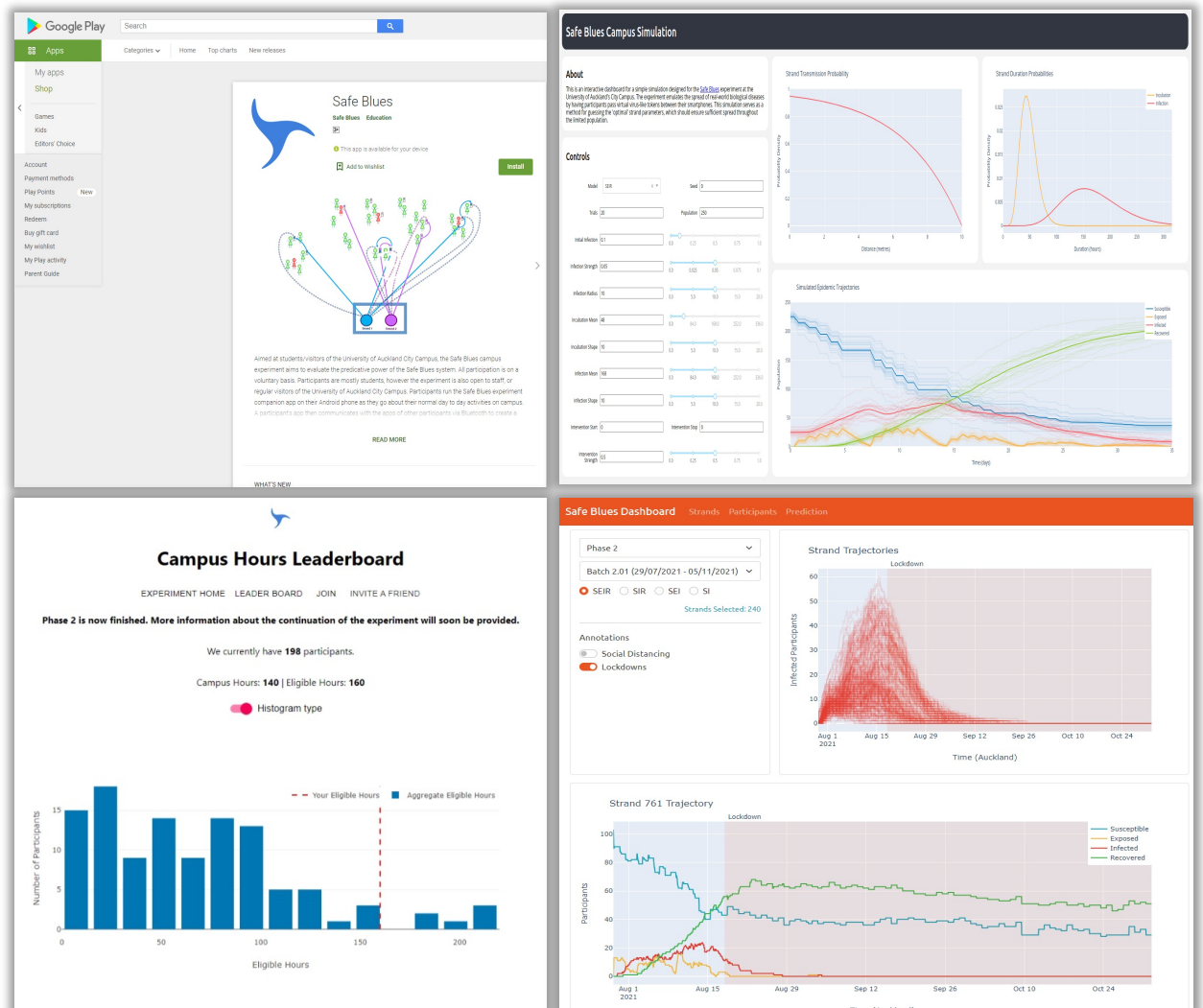
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## Safe Blues Concept

- A method for the spread of virtual safe virus-like tokens (called *strands*) between cellular phones
- The tokens mimic the spread of biological viruses (e.g. SIR, SEIR, SI)
- Spreading depends on Bluetooth technology
- Devised for Android phones
- The Safe Blues system periodically injects strands into the mobile host population
- At any given time, the phone of each user can be infected with multiple strands
- Real-time counts of the number of infected hosts for each strand are recorded in a server
- Data is collected anonymously

## Why Safe Blues

- Much COVID-19 data are collected incidentally as an adjunct to identify positive cases
- Safe Blues provides a digital framework for real-time population level estimates of the level of physical proximity and near-future projections of epidemics



**The Safe Blues system:** (1) the app (top left), (2) the simulation dashboard (top right), the campus experiment ( participant leader board on bottom left), and the data dashboard (bottom left)

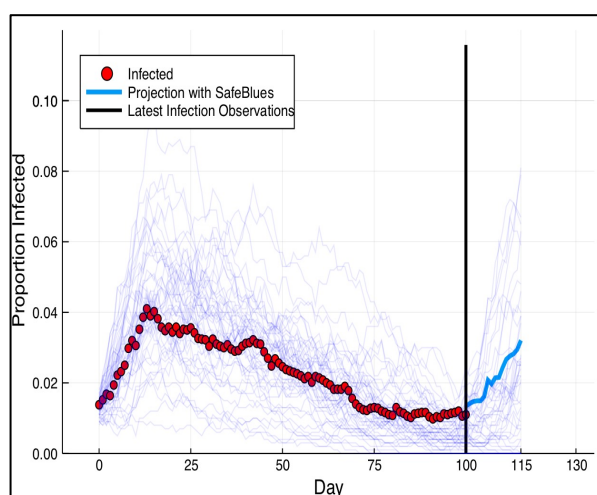
## The Campus Experiment

- At The University of Auckland City Campus
- First ever test of the Safe Blues protocol
- Open to any regular attendee and visitors of the campus who are at least 16 yrs of age and uses an Android mobile phone
- Website: <https://safeblues.org/experiment>

Phases	Dates
1	May 1- June 10, 2021
2	June 18 – September 16, 2021
3	September 17 – November 4, 2021
4	February 28 – April 21, 2022
5	April 22 – June 9, 2022

## Aim 1

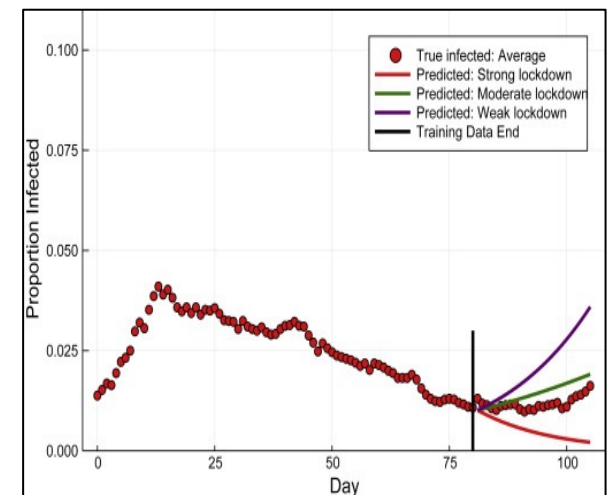
To assess the ability of using virtual virus-like tokens to predict the spread of pathogens



Predictions from simulated epidemics

## Aim 2

To evaluate the effect of social distancing measures on the spread of the epidemic



Predictions from simulated epidemics