Move to the Head of the Line with Embassy Kingston's Visa Queue Modelling Project!

Project Title	Move to the Head of the Line with Embassy Kingston's Visa Queue Modelling Project!
Project Summary	Are you a student in systems engineering, operational research or applied probability and would like to use your skills to help our mission overseas? We're seeking someone with interest in queuing theory to help us model approaches to managing our large number of visa applicants.
Country	Jamaica

Project Description

Embassy Kingston's consular section processes tens of thousands of visa applicants every year, most via a large public waiting area that uses queues for a variety of visa processing steps, including an in-person visa interview with a Consular Officer. Managing these large queues is a challenge under normal circumstances. The constraints and spacing requirements presented by COVID mean we have to re-examine and re-orient our traditional approaches to queuing in the interests of both processing efficiency and public health. In this project, an intern with a background in systems engineering or operational research would apply queue theory and stochastic modelling to help our section develop better approaches to the queuing and staging of visa applicants under a variety of conditions and scenarios. As a secondary objective, the intern would develop a basic application that a non-specialist could employ to adjust and redesign established queues in response to new variables or emergent conditions (such as those presented by the COVID crisis) or to enhance applicant throughput. The project offers students in the area of probability theory a unique applied project that directly serves the interests of a U.S. Embassy overseas, and which could offer benefits to a range of similar consular operations around the world.

Required Skills or Interests

Skill(s)
Coding
Data analysis
Data visualization
Design thinking
Infographic design
Research

Writing

Additional Information

You would fill the role of a operational analyst that would help find the most efficient queue models for the processing of visa applicants through the public areas of our Consular Section. The project would be anticipated to run the full duration of either the Fall or Spring semester. Ideal (but not required) skills or experience would include:
o Experience building discrete event simulation models.
o Experience using a simulation modeling package (e.g., Arena or similar)
o Coursework in probability and statistics
o The ability to analyze and interpret data from stochastic simulation output
o Programming experience in a language like Java
o Basic data analytics skills to get the data needed to quantify parameters in a model (
o Knowledge of basic queueing theory helpful (e.g., M/M/1 queue)

Language Requirements

None