

Disease Prediction and Prevention Lab

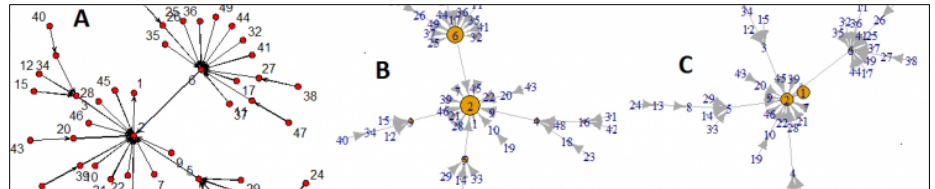
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Type of Research Position:

- Graduate RA at the PhD level
- Summer REU for undergraduates



Description of Research Project:

We develop new simulation-based optimization methodologies for understanding the dynamics of communicable and non-communicable diseases and computational decision-analytic models for analyses of population-level disease prevention and control strategies.

- **Interdisciplinary** - In addition to operations research, the work employs methods from applied mathematics, computer science, and economics. We collaborate extensively with other disciplines including public health, epidemiology, health economics, and public policy.
- **Diversity welcoming/friendly research group:** We welcome any student who is enthusiastic and passionate about solving global challenges faced by our society through mathematical modeling. Though the research questions we study are related to preventing diseases, we take the transformative approach outlined in the Sustainable Development Goals that eliminating poverty and hunger, reducing socioeconomic disparities, gender equality, health access to all, and sustained economic growth go hand-in-hand with disease prevention.
- **International research opportunities:** We work closely with organizations such the World Health Organization, Pan-American Health Organization, International Agency for Research on Cancer, and Centers for Disease Control and Prevention. Our works extends across multiple countries. So far we have developed models for countries in the regions of the Americas, Southeast Asia, and Africa, and plans are to expand these models to other countries.

Desired Qualifications and/or Background

In order to be successful, students should have an interest in mathematics and computational modeling as well as a passion for solving societal challenges.