**SISMID Module 6 Schedule: Stochastic Epidemic Models with Inference**

Instructors: Prof’s Ira Longini (IL), Tom Britton (TB) and TA Dongni Zhang (DZ)

Each topic will have a full set of pdf’s and video lectures to be viewed ahead of ZOOM lectures.

**Wednesday July 13**:

1. Introduction to stochastic epidemic models; notation, properties, examples, IL, TB
2. Important properties of epidemics and endemic situations, TB

**Thursday July 14:**

3. Inference on stochastic epidemic models, TB

4. Modeling using networks and other heterogeneities, Computer simulations, TB + DZ

5. Different models for vaccine mechanisms, IL

6. Stochastic models for small groups such as households, IL

**Friday July 15**

7. Continuation, Heterogeneities, inference from big outbreaks, TB

8. COVID-19 analysis, TB + DZ

9. Study designs for evaluating vaccine efficacy, IL

10. Design and analysis of randomized vaccine trials for emerging infectious

disease epidemics: The case of Ebola and COVID-19, IL

Schedule for Zoom lectures (times are in the Pacific Daylight Time (PDT) Zone):

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| Date | Time (PDT) | Topic | Instructor |
| Wednesday, July 13 | 11:45 – 12:00 | Introduction | IL, TB |
|  | 12:00 – 12:45 | Lecture 1 + exercises | TB |
|  | 1:00 – 1:45 | Lecture 2 + exercises | TB |
|  |  |  |  |
| Thursday, July 14 | 9:00 – 9:45 | Lecture 3 + exercises | TB |
|  | 10:00 – 10:45 | Lecture 4 + exercises + computer simulations | TB, DZ |
|  | 11:00 – 11:45 | Lecture 5 | IL |
|  | 12:00 – 12:45 | Lecture 6 | IL |
|  |  |  |  |
| Friday, July 15 | 9:00 – 9:45 | Lecture 7 | TB |
|  | 10:00 – 10:45 | Lecture 8 + exercises +computer inference | TB, DZ |
|  | 11:00 – 11:45 | Lecture 9 | IL |
|  | 12:00 – 12:45 | Lecture 10 | IL |