Clinic on Dynamical Approaches to Infectious Disease Data

December 15-21, 2019

Stellenbosch, Western Cape, South Africa

Program Information

Overview

This intensive, 1-week clinic will provide an introduction to dynamical models used in the study of infectious disease dynamics. Instruction will focus on how the complex dynamics of pathogen transmission influence study design and data collection for addressing problems in infectious disease research. The Clinic will consist of a series of interactive lectures and tutorials that will guide participants through the uses of dynamical modeling in epidemiology. Various modeling paradigms will be discussed, with a particular focus on the development of compartmental models, and participants will be given guidance regarding the appropriate use of models to address their own research questions. ***Working closely with their peers and with Clinic faculty, each participant will develop a research plan that describes a roadmap for integration of dynamic modeling with data collection and/or analysis in a study system of their choosing.*** The research plan can be used as a framework for grant or dissertation proposals when participants return to their home institutions.

Note that we place heavy emphasis on evaluation of the program and feedback from participants. The schedule will include two group feedback sessions run by our program evaluator, Masimba Paradza (Training Coordinator at SACEMA). Mr. Paradza will attend the entire program and compile feedback from these sessions and individual interviews to help us improve the Clinic for future years.

Clinic goals

Our goals are for participants to leave with:

- An understanding of dynamic principles and their role in the epidemiology of infectious diseases
- A familiarity with diverse modeling frameworks
- Experience creating a model world to address a research question
- Guided experience with construction of simple models
- A conceptual framework for fitting models to data
- A set of identified resources for continued learning

The Clinic on Dynamical Approaches to Infectious Disease Data (DAIDD) is part of the International Clinics on Infectious Disease Dynamics and Data (ICI3D) Program. DAIDD 2019 is supported by the South African Center for Epidemiological Modelling and Analysis (SACEMA) and the US National Science Foundation (NSF).

Ground rules

- All DAIDD participants are expected to engage fully in the clinic program. This includes attending all DAIDD sessions.
- Please be aware that participants come from a wide variety of backgrounds and cultures. This diversity adds greatly to the DAIDD experience, and all participants should strive to create a welcoming, respectful learning environment.
- Laptop use will not be allowed in the lecture hall during lectures or discussions.

Preparation

Before the Clinic, you should:

- Fill out the DAIDD 2019 Logistics Survey **by 9am SAST on December 10** at **http://www.ici3d.org/DAIDD/logistics/logisticsForm**. You will need the following information prepared to fill out the survey:
    - The email address associated with your Dropbox account (register for a free account at **www.dropbox.com** if you don't already have one)
    - Emergency contact information
    - A recent photograph (headshot) to be used to create a directory of participants
    - 3-5 keywords that describe your research interests (e.g. pathogen or host species, location, research topics, methods, etc) to be included in the participant directory
- Prepare a short oral presentation summarizing your research (2 minutes **max**, 1 slide in PDF format)
- Read the pre-assigned reading and complete the pre-Clinic quiz **by Dec 13**
- Install the required software on the laptop computer you will bring to the Clinic
- Work through the R Studio tutorial to familiarize yourself with this software
- If you are unfamiliar with or rusty on your understanding of the Binomial Distribution, work through the introductory tutorial provided

Detailed instructions and materials for preparation are available at http://www.ici3d.org/DAIDD/preparation. Materials you will need to prepare for the Clinic will be made available through the DAIDD website; however, some materials will only be available after you are given access to the DAIDD 2019 Dropbox folder.

Logistics

Dress is informal.

The **climate** in the Western Cape is mild, but some participants may find the evenings cool. Average temperatures for mid-December range from around ~ 15 °C (overnight low; ~ 60 °F) to the upper 20's (daytime high; ~80 °F). The UV index is typically very high, so you are encouraged to bring and use sunblock if you are prone to sunburn. Note that we will also be going for a **group hike** on Thursday morning. Please bring appropriate shoes and clothing.

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Note that the Western Cape is experiencing a **drought**, and water usage is restricted to a total of **150 litres per person per day**. We request that you be mindful of your water usage (e.g., by minimizing shower times, not running the tap while washing hands or brushing teeth, etc).

Accommodations have been arranged for all participants for the nights of 15 December – 20 December at:

Mont Fleur Conference Center
Blaauwklippen Road, Stellenbosch, 7600, RSA
Website: https://www.montfleur.co.za
Phone: +27 21 880 1112

If you will arrive before 15 December or depart after 21 December, additional nights of accommodation can be arranged in Stellenbosch but will be for your own account. Questions about **logistics** should be sent to Nadia Rhode (SACEMA-ICI3D Coordinator) at **admin@ici3d.org**.

All participants should make their own **flight arrangements** and email their final itinerary to **admin@ici3d.org by 5pm SAST on 11 December**. **Airport transfers** will be arranged based on the itineraries provided, and a schedule will be made available to participants by 13 December.

Note that South Africa is sometimes experiences rotational **load shedding** (or, rolling blackouts). Outages are planned, and the main conference room is equipped with a back-up generator. The impact of power outages on the DAIDD schedule, if they occur, is expected to be minimal. If you will be in Stellenbosch prior to or after the Clinic, you may be affected and are advised to check the load shedding schedule linked from this site: **http://stellenbosch.gov.za/news/latest/490-eskom-load-shedding-schedule**. As of 2019-10-24, load shedding has been suspended, but it may resume at any time.

Schedule

The Clinic will begin the afternoon of Sunday, December 15. There will be a mid-session evaluation on Wednesday evening. The Clinic will officially end by 2pm on Saturday, December 21. A **draft schedule** for DAIDD 2019 is available at: **http://www.ici3d.org/DAIDD/schedule**

Please note that the Clinic schedule is very intense. To the extent possible, participants should plan to devote their full attention to the Clinic and make arrangements that will ensure they do not have other obligations to fulfill during this timeframe.

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