

## Final Paper + Model

144 points (30% of final grade)

By 9am on Thursday, January 25, please upload to the corresponding Canvas assignment:

- A Word file including your final paper, following the naming convention:
  - **FinalPaper\_LastName\_FirstName.doc/docx**
- A R script including an annotated version of your final model, which “runs” to produce a plot embedded in your paper as a figure, following the naming convention:
  - **FinalModel\_LastName\_FirstName.R**

Your final paper should be turned in double-spaced and range between 2000-5000 words (roughly 5-10 pages), not including references and figures.

Please include the following sections:

- *Introduction/Background:* Introduce your infectious disease of interest and summarize:
  - disease history and etiological agent responsible
  - public health impact, with particular emphasis on low-income settings
  - what is known about its transmission dynamics, with particular emphasis on the history of dynamical modeling efforts to understand and/or intervene in the transmission process
  - 500-1000 words (30 points)
- *Methods:* Describe your research question and the modeling approach used to address that question. Include the following:
  - Model equations (from Jan 19 homework) and explanation
  - Model diagram (from Jan 15/16 homework) embedded as a figure with caption.
  - An explanation of the parameters used in this model and where the values were sourced.
  - **Attach your annotated R-script that builds this model and plots the corresponding figure.** This script needs to “run” and successfully produce the plot shown in the ‘Results’ section for full credit.
  - 500-1000 words (50 points: 20 for written section + 30 for annotated R script)
- *Results:* Describe what you learned about the disease and/or attempted interventions from your model. In addition to this description, include:
  - At least one plot embedded as a figure in the paper, which demonstrates something about the dynamical nature of this disease, as you inferred from the model. Also include a caption.
  - 250-500 words (25 points)
- *Discussion:* Place your findings in context with prior work and discuss how modeling could be used to make more substantive contributions to public health control for this disease in the future
  - 500-100 words (30 points)
- *References (25-100):* Formatted according to the Public Library of Science
  - 25-100 references (9 points)