

Group Member Names: \_\_\_\_\_

Section: \_\_\_\_\_

Disease: \_\_\_\_\_

Presentation Date: \_\_\_\_\_

## Disease Modeling Project Rubric (Updated):

The SIR model is a classic and oftentimes useful starting point for modeling epidemic dynamics of infectious diseases, but it's not applicable in every scenario. Your task is to choose a disease of human or wildlife importance that doesn't quite fit the SIR framework, and to create a better model for that disease. Once you've developed one (or more) potential model(s) based on your knowledge of the disease, you'll fit this model to real data using maximum likelihood approaches. Once you've successfully fit your model, you'll interpret your fit parameters in the context of existing literature focusing on that disease, and present your results in a 12-15 minute presentation.

Your grade will be a composite score based on your evaluations from your instructors, as well as evaluations from your peers. Details about expectations of each step of the process are detailed below.

Category	Excellent (5)	Good (4)	Fair (3)	Needs Improvement (2)	Poor (1)
<i>1. Background</i>	Students present enough background information about the disease's biology for the audience to understand the basics of its transmission and why it's of research importance	Students provide comprehensive background information about the disease's biology, covering transmission and its importance, but some details may lack depth or clarity	Students present some background information about the disease, but important information about its transmission or importance to human health or conservation is lacking	Students offer some background information, but it's either incomplete or lacks sufficient detail to fully understand the disease's transmission or its significance to humans or ecosystems	Little to know background information about the disease is presented
<i>2. Explaining Model Assumptions</i>	Students clearly explain what aspect(s) of their disease's biology violate assumptions of the SIR model, and why they may necessitate	Students explain most aspects of how their disease's biology challenges SIR model assumptions, but some connections to alternative modeling frameworks may be	Students somewhat address what aspects of their diseases' biology violated assumptions of the SIR model, but connections to their	Students partially address the SIR model assumptions and their disease's biology, but the explanation lacks coherence or fails to establish clear	Students don't address the SIR modeling framework at all. Modeling choices are completely unjustified by the disease's biology.

	an alternative modeling approach	somewhat unclear.	new modeling framework are unclear or confusing	connections to alternative modeling approaches.	
<i>3. Communicating Modeling Approach</i>	Students clearly illustrate the structure of their proposed disease model, both graphically and mathematically	Students provide a coherent explanation of their disease model, but there may be slight confusion in the presentation of graphical or mathematical components.	Students either only present a graphical or mathematically model alone, or present both in a way that is confusing or unclear	Students attempt to describe their modeling approach, but aspects of both their graphical and mathematical representation are presented ambiguously, making it difficult to understand.	Students don't describe their disease modeling approach at all.
<i>4. Find reasonable parameter estimates from existing literatures (or explain why they can't be estimated)</i>	Students derive reasonable parameter estimates from published literature and clearly explain how they were incorporated and why.	Students derive and explain reasonable parameter estimates, but are somewhat unclear in how or why they're implemented.	Students include reasonable parameter estimates from the literature, but neglect to clearly explain how they were incorporated into the model.	Students make some attempt to include parameter estimates from literature, but fall short in either communication or implementation.	Students don't make any effort to parameterize their model based on empirical evidence.
<i>5. Discuss findings and propose next steps</i>	Students put their results in the context of existing literature studying their diseases and highlight new potential directions to take their research in the future	Students effectively contextualize their results within existing literature and suggest potential future research directions, though there may be minor issues in design or delivery.	Students make some connection between their study and existing literature, but don't provide clear next steps to extend their research with additional work.	Students attempt to connect their study to existing literature but fail to provide clear next steps for future research.	Students make no connection between their study and existing literature studying their disease
<i>6. Presenting Effectively</i>	Students clearly communicate their findings with an	Students effectively communicate their findings with a clear and understandable presentation. The	Presentation is generally good, but some aspect of either design of presentation slides or delivery was	Students deliver a presentation with generally good content, but there are some aspects of	There were major barriers to understanding in the visual design of the presentation, its

	understandable, effective presentation	overall design and delivery of the presentation are well-executed, though there may be minor areas where improvement is possible.	distracting to the overall message.	either the design of presentation slides or the delivery that are distracting and detract from the overall message. These distractions may hinder the audience's full understanding of the content.	delivery, or both.
--	--	---	-------------------------------------	---	--------------------

(70%) Instructor Total:

(30%) Peer Total:

Composite Total:

Comments: