**BIOL 483 - Infection, Immunity, and Evolution of Disease**

**Spring 2022**

**Homework 7**

**Directions:** Listen one of these two (or both!) RadioLab programs:

<http://www.radiolab.org/story/patient-zero-updated/>

<http://www.radiolab.org/story/patient-zero-extra-ebola/>

Select one term regarding infectious disease or disease ecology that is unfamiliar to you or that you think would be unfamiliar to others.

Write a 1,500 character (~250-300 words) summary of this study and why it caught your attention. Please include a discussion of the following:

1) definition of the term

2) place it in context of infectious disease (i.e., why is it important)

3) provide examples or scenarios where this term is important

4) comment on any unknowns about the term.

5) Write 1-2 questions on anything that caught your attention or that you did not understand.

Yes, it is important to check for spelling, grammar, and sentence structure.

Remember that there is a UNR writing center that is freely available to students.

Upload your file to Web Campus by 1:30 pm on February 15th.

Infectious diseases, as we are currently experiencing today, run rampant in our daily world. These diseases result from various organisms such as viruses, bacteria, fungi, protozoa, and helminths infecting the host causing them to function differently than normal. However, there are rare cases in which the host remain unaffected by the organism making them *carriers* of the disease. These carriers can live their daily lives without even knowing that they have the disease! On the downside, while these carriers are unaffected, the fact of the nature is that not everyone are carriers, thus everyone else is susceptible to being infected by these organisms.

Diving into RadioLab’s program on Typhoid Fever, we are introduced to patient zero, the first known patient of the disease, Mary Mallon. She was an Irish-born American cook for many families in the northeastern states. Her cooking included many delicious dishes, one of which was her most famous ice cream and fresh peaches. While everyone she cooked for loved her food, little did she know that her cooking might have turned deadly for people. Mary Mallon was a carrier for the Typhoid disease which is caused by the Salmonella serotype Typhi bacteria. Individuals infected by the bacteria start by having a mild fever, which slowly increases over time. Additionally, people incur symptoms of headaches, sweating, rashes, stomach pains to name a few. Infected people have roughly 30 days before the onset infection starts to become more severe and deadly.

A carrier is someone who carries the disease but remains unaffected of the infection. It is important to know the carriers of a disease as these people could live their daily lives infecting people without them even knowing it. An example of this instance is Marry Mallon as she infected people with Typhoid without her even knowing. She was cooking for people and those individuals were getting sick after eating her food. One idea that concerns me though is if an individual kept “clean” as with washing their hands and following proper hygiene procedures, will less people be infected? On the same note, was Mary washing her hands prior to cooking? Ultimately, is there a better procedure in pinpointing individuals who are carriers?