Emerging Diseases: **Plant pathogens/ SARS activity**

1. The spread of SARS.

The World Health Organization has kept an archive of reports from the SARS outbreak. We can use these to understand the spread and control of this disease.

1. Download the summary table of statistics on SARS from the resourcs below. Organize the data by month of first case (ie, February, March, April, May) and contrast the cumulative number of cases, the number of imported cases and the number of health care workers affected in different countries. Describe the different patterns you observe. How did countries affected late in the spread differ from those infected earlier? How can you explain patterns you observe?

2. In a dispatch titled "SARS: Chronology of a Serial Killer", WHO epidemiologists outline how SARS was spread from China to other countries. Read this chronology and identify 4 dates on which global health officials took concrete steps to limit SARS. Write down the steps and the dates and explain how these steps slowed the spread of SARS.

3. The Chinese government didn't share information about SARS until it had spread in China for several weeks. How do you think the outbreak of SARS might have been different if China had shared information earlier?

Resources for the investigation:

WHO Summary table of SARS cases by country, 1 November 2002 - 7 August 2003
http://www.who.int/csr/sars/country/2003_08_15/en/index.html

SARS: Chronology of a Serial Killer
http://www.who.int/csr/don/2003_07_04/en/index.html

2. Citrus Canker in Florida

A plant epidemic can have dramatic impacts as seen in the response to the Irish Potato Famine/Late Blight epidemic in Ireland in the 1850s. Like epidemics that affect humans directly, disease outbreaks in food plants are the result of complex interactions between susceptible hosts, hardy pathogens and environmental factors that enhance spread and/or serve as amplifiers.

Asian Citrus Canker, *Xanthomonas axonopodis* pv. *citri* (*Xac*), a bacterial plant pathogen was first observed in Florida in 1910. The most recent outbreak, from 1995 to 2005, evidenced widespread infection of trees, amplified by various environmental factors. The Florida Department of Agriculture was charged with stopping the spread of disease;

strategies like quarantine are suggested for plant pathogens, but just as with human diseases, issues of rights, politics and economics influence what can be done.

The following documents highlight the spread and control of the outbreak.
•http://www.freshfromflorida.com/pi/canker/pdf/cankerflorida.pdf
•Citrus Canker, The pathogen and its impact,
http://freshfromflorida.com/pi/canker/pubs/cc-pathogen-impact.pdf
•http://www.apsnet.org/publications/apsnetfeatures/Pages/citruscanker.aspx

THE ASSIGNMENT: Make a table that compares the outbreak of Citrus Canker to the outbreak of SARS as defined by Quammen in Spillover and handouts from class. Contrast how policies and people amplified the disease. Look at the effects of environment and behavior. Review the different strategies for quarantine and the challenges to enforcement.

Here's the beginning of a table- you should add 5 categories. Your final table should have at least 12 categories for comparison- I'll grade this based on 12 or more. When you are done with the table, write a concluding paragraph, reflecting on differences and similarities.

	SARS	**Citrus Canker, Florida**
Pathogen		
Method of transmission		
Host/Susceptible population		
Environmental conditions for spread		
Contributing policies		
Strategies for control		
Estimated costs		
Potential for reemergence		