# BIOS6621-Homework6-20191017

**Exercise2:** Consider only variables that are specifically mentioned in this  
description.

1. What is the general feature or trend for the patient with idiopathic fibrosis, after the one year after baseline?

2. Does idiopathic fibrosis increase or decrease the occurrents of other lung diseases?

3. What are the most useful and informative features we can get from X-ray scan, for patient.

4. How does the idiopathic fibrosis affect patients’ lung capacity and forced vital capacity.

5. Is the radiologist diagnosis always consistent with the computer program result?

6. What features from the baseline would relate with early death in one year, if the death is caused by idiopathic fibrosis or related results.

**Exercise 3:** Sketch a conceptual model describing the questions yellow marked on  
p32-33 in the Wyatt 2008 paper.

**Exercise 4:** A cardiologist would like to study the association between race and adverse outcomes. Explain and give an example of what it means for

a) the level of care the patient receives is a mediator for the relationship between race and adverse outcomes;

b) the sex of the patient is an effect modifier of the relationship between race and adverse outcomes.

Adverse outcome is an unintended and unwanted event or state occurring during or following medical care. The higher level of the care, the less of the adverse outcome would occur during the treatment. Hence the evaluation to identify and verify whether the patient is receiving care at the appropriate level would give us evidence on the possibility of adverse outcomes. If different race patients after treatment were given different level of care, then the adverse outcomes rate will be different too.

Gender might cause stratification among different groups, and the same exposure will have a different effect among different subgroups. For example, female patients might more sensitive to specific treatments, and have more aggressive response. Then it will be more attention the side effect and to prevent adverse outcomes for female patients. This will buffer the effects from different races.