Project Outline Assignment

Quick recall of class project requirements (1 of 3)

Wagoner Johnson ME 482: Experimental Tissue Mechanics 2016

Class Project (35%)

How do disease states or conditions alter the mechanical properties of cells or tissues?

The purpose of this project is to research diseases that affect cell or tissue structure, composition, and mechanical properties. **Students are strongly encouraged to work in pairs**, but **no two projects can be the same**. You must "claim" your disease (sign-ups on Piazza). NEW! We will do some group activities to help facilitate interactions and encourage formation of project partnerships.

The objectives are to identify a disease (**not osteoporosis or osteoarthritis**), do an extensive literature search, and write a report that includes:

(1) **Quantitative* data** from multiple sources showing the associated change(s) in mechanical properties of the affected cells or tissues;

(2) **Detailed descriptions** of the changes in cell or tissue *structure* and *composition* that are responsible for the changes in mechanical properties.

(3) **Clinical implications**;

(4) A **summary of the mechanisms** by which the change(s) occur(s);

(5) **Current treatments** and/or therapies and treatments/therapies under development.

**If quantitative data is not available, choose another topic.*

Quick recall of class project requirements (2 of 3)

General Format for written report (general requirements for presentation are same, more detail later in semester)

- Abstract (~200-300 words)
- Introduction (start broad, get specific, probably >1 but <3 pages)
  - Layman's description of the disease that any non-technical family member would understand
  - Who it affects (men? women? children? Particular ethnic group?)
  - How it affects them (in layman's terms) i.e. clinical implications
  - Economic impact (e.g. bone grafts cost billions/year etc)
  - Brief summary of the specifics of what the project/review will address
- Main Text must include the following information (organized as you wish):
  - More in depth technical description of the disease including a summary of the mechanisms by which the measured changes occur
  - More technical description of how it affects the patient – i.e. clinical implications
  - Specific, **quantitative changes** in mechanical properties
  - Specific changes in composition, structure, microstructure, etc.
  - Current treatments for the disease or treatments underdevelopment/in trials (at minimum), treatments being researched (probably about same length as introduction, not likely < 1 pg).
- Short paragraph at the end about why you chose the disease (don't forget this!).

Quick recall of class project requirements (3 of 3)

Grade (35%, broken down as shown below).

The assignments are intended to help you to move your project forward throughout the semester rather than only at the end.

- Brief project proposal to ensure that you have chosen an appropriate topic (5%). Send to me by email.
  - It must include evidence from multiple sources (≥3) that the disease you have chosen results in measurable (i.e. quantitative NOT qualitative) changes in mechanical properties.
  - You should get all 5%. If it is not done well or the topic and plan need some tweaking, I will return it and ask you to do it again with the possibility of getting full credit.
- Paper Reviews to help get started on the literature review. (I will provide additional guidance on this.) (20%)
- Project outline (more detail on assignment later) (10%)
- Presentation during the final exam period (25%)
- Written Report (40%)

Students must submit electronic documents with bibliography (and the corresponding endnote library or similar if possible). You will present your project during final exam period. This is one of the best parts of the project as it is interesting to learn from other projects. No two groups (of two) or individuals can do the same disease. You may use tables, graphs, and figures from literature as long as you ***cite them appropriately. This is critical***.

What is the purpose of the Project Outline Assignment?
(10% of 35%)

1. To make sure, <u>for your own benefit</u>, that you are making progress on all parts of the project.
2. To convince <u>ME</u> that you have put effort into all parts of the project.

How do you do 1 and 2?

There different ways you could accomplish 1&2 from the previous slide. Here is one suggestion. You may take a different approach, keeping in mind that your grade will be based on #2 in previous slide.

Write a couple of sentences or even bullet points of points/info/etc plus references addressing the different requirements. List the references to the information you included, but also include additional references on the topic that you will incorporate in your final report.

E.g. you could provide info on ** below. Plus some evidence that you have worked on the main body part (aside from what you put in your project proposal).

- Introduction (start broad, get specific, probably >1 but <3 pages)
  - ** Layman's description of the disease that any non-technical family member would understand
  - ** Who it affects (men? women? children? Particular ethnic group?)
  - ** How it affects them (in layman's terms) i.e. clinical implications
  - ** Economic impact (e.g. bone grafts cost billions/year etc)
  - Brief summary of the specifics of what the project/review will address

I want to emphasize that this assignment is *not* about good, complete technical writing. It *IS* about communicating so don't write *GIBBERISH* or you won't accomplish the goal! But you don't have to have the quality of writing that was expected for your paper reviews. This is *outlining and getting some stuff on paper* before we get too close to the deadline. I will give you some feedback, but you can't take that as meaning that if you do exactly those things you will get an A, unless you basically have given me a whole draft of your project!

Due Date…

I am going to leave it more or less up to you…

If you want feedback by the end of the day next Friday, when break starts, then you should turn it in on Monday, 11/14.

After that, I will do my best to return it to you within 5 days, excluding holidays (Thurs/Fri of break).

If you don't want to do it, then you will loose 3.5% of your grade.

If you turn it in after the break (after class period on 11/28), you will ½ the points, automatically.

If you turn it in with your final project as a separate document, you will loose 2/3 of the points, automatically.