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### BIOL 335 Pathophysiology: Bracketology: Disease Edition

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## **Bracketology: Disease Edition**

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This project was designed for use in BIOL 335 Pathophysiology, an elective course for which Anatomy & Physiology I and II are prerequisites. The project is based on a single-elimination bracket where progression to the next round is decided by vote of the class, but the votes are independent of student grades. As individual students are “eliminated” by the voting process, they are assigned to work with another student who is still “in,” so the groups gradually become larger as the project progresses. There are two graded assignments for each round: one is a presentation, and one is a written assignment. The project requires sufficient class time for weekly presentations and for the students to coordinate their research and presentations, especially in the later rounds. “Steps” in the timeline below can be a full class period, a partial class period, or a posted deadline as appropriate.

### **Round 1: Topic Introduction**

*Round 1 vote: Which disease do you find more interesting?*

Step 1. Brainstorming/topic research

Step 2. Topic due; Seedings/Research day

Step 3. Presentations (*Professor updates bracket and assigns new groups immediately after Round 1 presentations*)

Brainstorming assignment: Use AccessMedicine Case Files database to explore case files in several categories, and complete this assignment to record your research progress as you explore this database. Even if you have an idea in mind as you begin, please explore at least 5 different categories in this database. Record the name of each category, the case you select in each, and why you’re interested in each topic. Use this document to build your list of at least 5 cases, and then submit your top choice on the Google sheet as your topic for this project.

Presentation: Give a 4-6 minute presentation outlining your selected clinical case. We will vote on head to head match-ups during class. Everyone must give a presentation, even if you don't have a match-up in round 1. Presentations should be focused and professional. Your goal is to convince your classmates why your selected case is worth investing time through the rest of this project to research it further. All sources need to be cited on slides (in-text citations) and on a references slide in APA formatting.

## **Round 2: Tissue-specific Effects**

*Round 2 vote: Which disease has the greater impact on tissue function in the body?*

Step 4. Research/presentation prep

Step 5. Presentations (*Professor updates bracket and assigns new groups immediately after Round 2 presentations*)

Presentation: Give a 7-9 minute presentation focused on the body's response to this disease at the cell and/or tissue level. You may want to include topics such as the immune response, abnormal physiology, etc according to what is most relevant to your topic. We will vote on head to head match-ups during class. If you are working with a partner for this round, then you should share the work and presentation equally. Everyone must participate. I suggest that you use at least three sources to discuss two different aspects of the disease. All sources need to be cited on slides (in-text citations) and on a references slide in APA formatting.

Infographic: Create and submit an infographic summarizing the cell/tissue-level response to this disease. You may choose to focus on one aspect of the disease if one infographic is not sufficient to summarize all aspects. All sources should be cited in APA formatting as a references section. Everyone should complete this assignment independently.

## **Round 3: Treatments**

*Round 3 vote: Which disease has the most promising new therapies being developed?*

Step 6. Research/presentation prep

Step 7. Presentations (*Professor updates bracket and assigns new groups immediately after Round 3 presentations*)

Presentation: Give a 15-17 presentation focused on new therapeutics that are being developed to treat or prevent this disease. These therapeutics may include things like vaccines, physical or occupational therapy, antibiotics or chemotherapy, gene therapy, etc. We will vote on head to head match-ups during class. Since everyone is working in a group at this point, you should all pick a different therapy to research and present. I suggest that each person use at least two sources. All sources need to be cited on slides (in-text citations) and on a references slide in APA formatting.

Writing Assignment: You are a healthcare provider who is treating a person with the disease that you're researching. After seeing them at their appointment, you've done more research and determined that a new therapy (the one that you're researching for this round) will be the best course of treatment for your patient. Write a letter to your patient explaining how the therapy will work in treating their disease. Be sure to include information like how the therapy will work in treating their disease, how the therapy will be administered, side effects that they may experience, and what the therapy will do for them. I suggest a 1-2 page explanation (12 pt font, double-spaced). As always, cite all sources using APA formatting.

## **Round 4: Comprehensive Care Plan**

*Round 4 vote: Which disease will be treated most effectively by this comprehensive care plan?*

Step 8. Research/presentation prep

Step 9. Presentations

Presentation: Give a 30 minute presentation to share a comprehensive care plan for a patient with this disease. Everyone in the group will take on the role of a healthcare provider to research and will present the role of that provider in helping to treat this patient. The person who first selected the topic is designated as the group leader and should coordinate the division of roles within the group. The group leader will also begin the presentation of the care plan by giving a brief presentation of the clinical case. Every person will then share their role on the healthcare team, their responsibilities in caring for this patient, specific treatments that they recommend, timeline to recovery/resolution of their role, any side effects or complications they might expect, how they would address those complications, etc. You may choose to build a PowerPoint presentation as a visual aid, but this will primarily be an oral presentation given to the group. All sources need to be cited on slides (in-text citations) and on a references slide in APA formatting.

Writing Assignment: Prepare a written outline that includes your basic job description as part of the healthcare team and the main points of your care approach. This outline can be typed or handwritten, but you must have a hard copy to use during the presentation.