Integration Project BENCHMARK 1
INFORMATIONAL WORKSHEET

This worksheet is absolutely the most important part of your project. If you can answer all the questions on this document, then you’ve picked a good topic and you’re ready to tackle each of the upcoming benchmarks. If you don’t take the time and effort to complete this worksheet, then you will find yourself frustrated, discouraged, angry, and probably bitter, resentful, and depressed as well. Don’t be bitter, resentful and depressed! Do a good job on this worksheet!

When you begin this task, you will be starting your research, so keep careful track of all your resources. Please confer with the awesome CR librarians if you need help finding good resources. We actually have access to some very cool research tools through our library- so take advantage.

Finally- because this is your very first benchmark, you must ALSO establish your portfolio. Your portfolio is simply an organized notebook in which you will keep ALL your benchmarks.

Grading: For credit, put a hard copy of the informational worksheet in your portfolio and then engage in a conference with your awesome teacher during LAB. You may answer the questions from the worksheet on a separate piece of paper and they can be typed, or not. Your worksheet will not be critically graded- it will instead provide an opportunity to EVALUATE the quality of your topic.

1. Thesis: Describe your topic in 1-2 sentences. (The best theses are clear, concise, precise, and correct!)
2. Explain the relevance of your topic. In other words, why are you interested in this?
3. What class lectures are relevant to your topic?
   a. Topic 1 (and date from syllabus):
   b. Topic 2 (and date from syllabus):
   c. Topic 3 (and date from syllabus):
4. What pages from the textbook (and from which textbook) are relevant to your topic? Make sure the connection is CLEAR.
5. Key search terms:
   a. Term/phrase 1:
   b. Term/phrase 2:
   c. Term/phrase 3:
   d. Term/phrase 4:
6. One quality resource:
   a. Title, URL, Summary, Defense
7. One more quality resource:
   a. Title, URL, Summary, Defense
8. One primary research article
   a. Title, URL, Summary, Defense
9. How might your topic relate to:
   a. homeostasis?
   b. extracellular fluid?
   c. feedback loops?
10. How will you connect your topic to disease or failure to function?
11. How does your topic illustrate multiple body systems working together?
12. What is one possible cellular mechanism that relates to your topic?
Write an informational essay on your topic. In this essay, you will introduce your topic and provide a broad overview of the content you will discuss. Your essay will be similar to an informational brochure you might find at a doctor’s office.

Your essay will be checked for plagiarism by a program called Vericite. This will be done totally within Canvas, and you won't have to do ANYTHING ELSE to have it checked. We are PILOTING this program- so let me know if you have ANY questions at all.

Grading: Your essay will be critically graded out of 5 points. Well-done essays will be easy to understand, will provide "big picture" context, and will correctly cite all sources. If your essay does not include both in-text citations AND a works cited list, you will get zero points for this benchmark. You will also get zero points if your essay includes quotes from any source. Put content in your own words. ALL ESSAYS MUST BE LESS THAN 2 DOUBLE-SPACED PAGES. (This does not include your works cited page.) If your essay is longer than this, I will stop reading at two pages.
Integration Project BENCHMARK 3
HOMEOSTASIS ESSAY

For this benchmark, you will first answer the following 12 carefully crafted questions related to your topic. You will then compile your answers and write an essay about the link between your topic and homeostasis, ensuring each question has a clear, concise, precise and correct answer that is somehow illustrated in your essay. Your final research paper must somehow relate to homeostasis. This essay will help you accomplish that task.

If you need help with a thesis, something like this might work:

____ is a homeostatically regulated variable that is related to (put your topic here) because _____.

You may create an ORIGINAL visual illustration to support your essay if you’d like. If you include a visual, you must REFERENCE it in the essay and include a written caption.

Your essay will again be checked for plagiarism by a program called Vericite. This will be done totally within Canvas, and you won't have to do ANYTHING ELSE to have it checked.

Grading: Your essay will be critically graded out of 5 points. Well-done benchmarks will be easy to understand, accurate, and will clearly illustrate your topic’s connection to homeostasis.

Answer THESE QUESTIONS and attach these answers to the back of your essay.

1. Thesis (Describe your topic in 1-2 sentences. The best theses are clear, concise, precise, and correct!):
2. Define homeostasis:
3. What is the variable related to extracellular fluid that is being regulated in your example?
4. What is the set point (or homeostatic range) for this variable?
5. What is the receptor/sensor that detects changes in this variable?
6. What is the input message/afferent path?
7. What is the integrator that processes the receptor’s information, compare that to a set point, and dictate an outcome?
8. What is the output message/efferent path?
9. What is the effector that does something to bring the variable back into the homeostatic range?
10. What is the impact on the original variable in question?
11. Is this an example of a feedback loop? Explain.
12. What happens if homeostasis is not maintained in this specific situation?
Find one primary research article related to your topic. This article must be reporting an actual scientific study (that is the definition of primary research) and it also must be published in a peer reviewed journal. While there are some amazing resources out there that describe research done by OTHER people, these articles are called "review articles" and are not primary research. An excellent test of whether or not your article is an example of primary research is to check for a "Methods" section. If an article describes the METHODS of a scientific study, then it is probably reporting about primary research. If you search for resources using the library website and databases, you’ll have access to a great number of primary research articles.

Grading: You will receive full credit if you find a primary research article that is related to your topic. You will receive no credit for an article that is NOT primary research.
Describe just one cellular mechanism related to your paper topic. It must describe something BEYOND what was covered in class, and it will be very likely that you will have to consult additional resources to clarify necessary details of your mechanism. Remember, a mechanism is a detailed cellular process that explains HOW a physiological process happens in your body. For example, the mechanism of a muscle contraction begins when a somatic motor neuron releases Ach onto the motor end plate, where it binds with nicotinic Ach receptors, which open to allow Na+ ions to enter the myofiber...etc. For particularly complicated mechanisms, you might consider including a visual with this benchmark to improve clarity. You are welcome to hand-draw the visual. You should definitely include a "step by step" caption with your visual (or something similar) so it can be easily understood.

Grading: Your written description of a cellular mechanism related to your topic will be critically graded out of 5 points. If your essay does not include both in-text citations AND a works cited list, you will get zero points for this benchmark.
Describe how your topic illustrates the integrative nature of human physiology. It should be clear by this point that body systems do not act alone. Every single body system is affected by (and affects) every other body system. The subtle and complex interplay between the body systems enables healthy function. Clearly explain how your topic illustrates multiple body systems working together. (Note: you do not need to include ALL body systems in this essay. You just want to engage in an EXPLICIT discussion of how and why body systems work together, using your topic to illustrate this.)

Please refer to the ROCK the IP #6 for a suggested THESIS for this essay.

Grading: Your written description the integrative nature of human physiology related to your topic will be critically graded out of 5 points. If your essay does not include both in-text citations AND a works cited list, you will get zero points for this benchmark.
Actively read a primary research article related to your topic. In benchmark 4, you found an article that reported the results of an actual scientific study. You can read this article or another primary research article.

Active reading is a technique that helps you RETAIN and UNDERSTAND what you READ. Primary research is very DENSE writing. Most of the time, it is not something you can casually read while waiting for your coffee. It takes time, focus, and an internet connection (so you can look up all the words you've never seen before). When you have finished actively reading your article, it will be clear that you've interacted with the content in a meaningful and REAL way. As you read your article and begin researching the answers to your questions, be sure to keep track of the resources you use to answer these questions. These resources will come in handy as you work through this project. Plan ahead…this task will take you at least two focused and disciplined hours.

Grading: You will receive full credit if every page of your primary research article (hard copy!) is messy with your thoughts and questions. (Note: Highlighting does not count as active reading. A well-highlighted document will receive zero points on this benchmark.) You will receive no credit for an article that is NOT primary research.
Integration Project BENCHMARK 9
DYNAMIC OUTLINE

Create a dynamic outline for your paper. It is time to focus in on actually writing your research paper. All the previous benchmarks were designed to help you solidify your knowledge so you can work through the ultimate task of writing your paper. This outline will provide the backbone for your paper and must therefore be useful to YOU. That means there is flexibility in how you complete this benchmark.

The way you put the pieces together in your final paper is totally up to you...but there are several things that MUST be included. Be sure to consult the final paper rubric to see exactly what you must include. However, how you organize your paper to present your knowledge is TOTALLY up to you (and really, is sort of the POINT of the project!).

You can turn in this benchmark at the END OF LAB.

Grading: Your outline will be critically graded according to the rubric in Canvas.
Integration Project BENCHMARK 9
PEER REVIEW INSTRUCTIONS
UPDATED: 4/14/17

RIGGS’ GOAL: Provide VALUABLE feedback on peer papers, evaluating CLARITY and UNDERSTANDING.

On Monday April 17, meet your groupmates, exchange contact info, and make a plan for your day.
  • Group members names and contact info:

By 8:30am on PEER REVIEW day (Wednesday April 19), carry out the following tasks:
  1. Upload a copy of your draft to Canvas, in the Benchmark 9 assignment
  2. Bring enough hard copies of your paper to class so that EVERY PERSON IN YOUR GROUP has one, INCLUDING YOURSELF
     a. That means you need to bring _______ papers!
  3. Meet up with your groupmates, who also have hard copies of their papers.
  4. Dish out materials so that every person has:
     a. Hard copies of each paper to review (including your own)
     b. 1 copy of the FINAL PAPER rubric for each paper being reviewed (including your own). This means you need ______ copies!
     c. 1 copy of the Process Evaluation Form (per person). Begin filling this out now, with first and last names of all your groupmates.

Sometime before the peer review packet is due (April 19 by 3pm), carry out the following tasks for EACH paper in your packet:
  1. In the top left corner of the paper you are about to review, write “Reviewed by: YOUR NAME.”
  2. Carefully read the entire paper one time through. Comment liberally. If you don’t understand something, say so. Make sure you brain is fresh and engaged when you read the paper, so your feedback is meaningful. Give the kind of feedback you would like to receive.
  3. Read through the “Some helpful questions to consider…” handout. Flesh out your feedback accordingly.
  4. After reading through it once, read it again. This time, as you read, complete a FINAL PAPER rubric for that paper. When you are finished, record the results of your evaluation in Table 1 on the Process Evaluation Form.
  5. Repeat for the other papers (including your own). Each paper gets its OWN Peer Review Rubric, but all YOUR data is recorded on ONE Process Evaluation Form.

After everyone has read the papers in their packet, you must:
  1. Return reviewed papers AND the Peer Review Rubrics to each person in your group.
  2. Sort through the feedback you received from your groupmates. Complete Table 2 of the Process Evaluation Form.
  3. Process Evaluation Forms (1 per person) are confidential. You do not have to share your form with anyone in your group.

The entire PEER REVIEW process is DUE on April 19 by 3pm. By this time, you must:
  1. Turn in your Process Evaluation Form to RIGGS.
In addition to reading and reviewing each draft in your group, you will also EVALUATE the quality of feedback delivered by your SELF and your teammates.

**Table 1: To be filled out as you review papers**

<table>
<thead>
<tr>
<th>Group Member Names</th>
<th>Rate the quality of the feedback you GAVE to this person:</th>
<th>What score did you give this person?</th>
<th>COMMENTS</th>
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<td>10- amazing!</td>
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<td>5- Meh…</td>
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<td>1- Completely unhelpful</td>
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**Table 2: To be filled out as you read through the comments on YOUR paper.**

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<th>Group Member Names</th>
<th>Rate the quality of the feedback you RECEIVED from this person</th>
<th>What score did this person give you?</th>
<th>COMMENTS</th>
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<tr>
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Please include any additional comments about this process on the back of this form.
Some helpful questions to consider when reading someone’s paper…

**Homeostasis:** Student uses specific examples related to their topic to illustrate the concept of homeostasis, including an explanation of why it is so critical to maintain.

1. Did they mention homeostasis?
2. Is the concept of homeostasis clearly and accurately defined?
3. Does their discussion of homeostasis explicitly connect to the topic of the paper?

**Cellular mechanism:** Student accurately integrates at least one detailed cellular mechanism into the paper.

1. Does the mechanism relate to human physiology (not genetics or microbiology)?
2. Does the mechanism go BEYOND what we covered in this class?
3. If included, is the visual helpful?
4. If no visual is included, would it be helpful?

**Feedback loop:** Student accurately describes and labels a specific example of a feedback loop that explicitly relates to their topic.

1. Is the FB loop positive or negative?
2. Are ALL parts of the FB loop accurately labeled?
3. Is the FB loop relevant to the overall thesis?

**Integrative physiology:** Student relates their specific topic to the way different body systems work together in an integrated manner.

1. Is more than one body system mentioned?
2. Is it clear that more than one body system is involved in the topic?
3. Is it clear that body systems interact with and are affected by each other?

**Disease/malfunction:** Student clearly and accurately relates symptoms/effects of disease/malfunction to the breakdown of normal physiological function.

1. Is there a part of the paper where disease/malfunction is discussed?
2. Is normal function compared to the malfunction?
3. Are the consequences of malfunction illustrated?
4. Are the causes of malfunction clear?

**Synthesis:** Entire paper illustrates a common theme, deliberate organization, and clarity of intention.

1. Is the thesis statement apparent? Do you understand what the paper is about?
2. Is there a meaningful conclusion?
3. Do the concepts discussed in the paper all connect to the thesis statement?
4. Does the paper flow from one topic to the next?

**Communication:** Paper is well written, accurate, easy to understand, and makes use of proper writing conventions.

1. Are there grammar/spelling errors?
2. Are "science words" unnecessarily capitalized?
3. Are there any "first person" references to the author or reader (me, I, you)?
Submit a second rough draft to Riggs for critical feedback. You can only participate in this benchmark if you also participated in the peer review. You will receive detailed comments as well as an actual grade calculated using the assignment rubric in Canvas.

Click here for a printable copy of the paper rubric.

Grading: For credit, you must submit your rough draft to Canvas. Even though Riggs will deliver critical feedback, you will receive full credit for just turning in a draft.