

**Supplementary Figure 1:** Description of NY Times style article summary given to students.

NY Times Style Article Summary

8 summaries total, worth 25 points each

Write a summary of the primary research article for a general, non-science audience. This should include a brief background (2 pts.), overview of the problem (5 pts.), the research questions (5 pts.), brief description of how the research was done (5 pts.), the main finding (5 pts.), and the bigger picture of why this research is important (3 pts.). You should also include a title for your summary. The summary should not exceed one page single spaced, but may be as short as 2 full paragraphs.

**Supplementary Figure 2:** Description of the presentation and discussion assignment given to students.

Presentation and Discussion Assignment

For this assignment you will chose a biology lab from the list of approved labs and further investigate the details of the lab. This will include e-mailing the PI and other lab members (at least one post-doc, one graduate student, and one undergraduate student, if possible) to set up a time to briefly meet with them to learn about the inner workings of the lab. I have provided a set of interview questions which you should ask, in addition to any other questions that you might have. In addition to the interviews you should ask for a quick tour of the lab. **Scheduling times that work for everyone is difficult so be sure to do this as far in advance as possible.**

Once you have interviewed lab members and toured the lab, you will put together a 15-20 minute PowerPoint presentation about what you learned from your interviews and tour. This will be presented to the class on your assigned day. The presentation should include enough information about the lab that your classmates are able to have just as clear of an understanding about the lab as you now have. There will be approximately 5-10 minutes for questions at the end of your presentation.

In addition to your presentation, you will have to choose a publication from the lab for the class to read and discuss. You can ask the PI of the lab for any paper recommendations when you are interviewing them. **To ensure that the paper is appropriate for class, you must submit it to me one week before your assigned date.** You will then be in charge of leading the whole class discussion about the paper.

Of course, I understand that much of this is very new for many of you and am happy to help with any questions or concerns you might have.

**Supplementary Figure 3:** Rubric for the presentation and discussion assignment.

Score	50	45	40	35	30
<b>Slide Design</b>	Each info slide outlines or supplements a major point or details previous point. Doesn't visually overload or contain small font – all text clearly visible.	Most info slides outline or supplement a major point. Most don't visually overload or contain small font. 8-40 words on a few slides. Sequence of ideas	Some slides outline or supplement a major point. Most don't visually overload or contain small font – all words clearly visible. 645 words on a few slides.	Few slides outline or supplement a major point. They often visually overload or contain small font – all words clearly visible. Too many or too few words. Direction of talk	Talk quite difficult to follow, slides typically confusing or presented in illogical order.

	10-30 words per slide. Completely logical sequence of ideas.	mostly logical.	Hard to tell where talk was heading sometimes.	hard to follow.	
<b>Organization &amp; Content</b>	Presentation includes clear descriptions and answers to the interview questions, as well as additional questions and comments.	One component not clear and organized.	Multiple components not clear and organized	One component missing, not clear and organized.	Multiple components missing, not clear and organized.
<b>Presentation Style</b>	Looks at audience while talking, doesn't read from slides. Speaks loudly and clearly. Presentation reflects lots of practice, and segues from one slide to the next	Occasionally talks to slide rather than audience, rarely read from slides. Speaks loudly and clearly. Presentation reflects some practice, and segues from one slide to the next.	Occasionally talks to slide rather than audience, rarely read from slides. Most speech loud and clear. Presentation reflects some practice, and segues from one slide to the next.	Talks to slide almost as much as to audience; reads from slides. Speech hard to hear at back of room; pace too slow or too fast. Presentation reflects need for more practice.	Presenter demonstrates clear lack of practice or preparation.
<b>Paper Choice</b>	Paper is appropriate length and level for the class. The paper is relevant to the topic and written by assigned lab.	Paper is slightly above or below length and level for the class. The paper is relevant to the topic and written by assigned lab.	Paper is significantly above or below length and level for the class. The paper is relevant to the topic, and written by assigned lab.	Paper is significantly above or below length and level for the class. The paper is relevant to the topic, but not written by assigned lab.	Paper is significantly above or below length and level for the class. The paper is not relevant to the topic and not written by assigned lab.
<b>Discussion</b>	The paper has clearly been read and the student has a general understanding of the material. Comes with questions and prompts to promote discussion.	The paper has clearly been read and the student has a general understanding of the material. Does not come with questions and prompts to promote discussion.	The paper has been read, but not as thoroughly as necessary and the student has some understanding of the material. Does not come with questions and prompts to promote discussion.	The paper has been skimmed at the most and the student has little to no understanding of the material. Does not come with questions and prompts to promote discussion	The paper has clearly not been read and the student has no understanding of the material. Does not come with questions and prompts to promote discussion

**Supplementary Figure 4:** Example interview questions for students to use during their interviews when they visit the lab of their choice.

Example questions

Faculty member:

- What are the broad questions that the lab aims to address?
- What organism(s) does the lab use to address these questions?
- What makes those organisms the best ones for this research?
- How does this lab's research contribute to a broader knowledge base?

- How are the projects in the lab funded?
- How many people typically work on one project?
- Do you collaborate with other labs either in the department or outside of the department?
- What are the general steps that members of your lab take when designing and running experiments?
- What is the most challenging part of the type of research that you do?
- Do most projects in your lab result in a publication?
- What journals do your manuscripts typically get published in?
- What papers that your lab has published would you recommend a first or second year undergraduate read?

Post-Docs, Grads, Undergrads (make sure to ask someone for a quick tour of the lab)

- What is your role in the lab?
- What project(s) are you currently working on?
- What will this research contribute to the field?
- How many people are working on this project with you?
- How did you come up with the idea for this project and/or why are you interested in this project?
- What are some techniques or methods that you are using?
- Do you plan to publish a paper(s) on this research?
- What has been the most challenging part of this research?

**Supplementary Figure 5:** Description of the brief literature review assignment given to students.

Brief literature review (250 points)

For this assignment you will write a brief literature review on a topic of your choice.

The topic must be in the field of biology and must be approved by Kelly. The topic may be one that we discussed over the past 9 weeks of class, or another that you find interesting. You should e-mail your topic choice to Kelly by April 16<sup>th</sup>.

Your review should describe the topic in detail, outline what is known about the topic (using the primary literature), and identify what still needs to be done or questions regarding the topic that still need to be answered.

-You are required to cite at least 4 primary research articles. They should be cited in the text and in a reference section at the end of the paper. Please also attach the abstracts from each of the articles to your paper copy only.

-The literature review should be approximately 2 pages single spaced, or 4 pages double spaced (the reference section does not count towards this page count).

-The font should be 12 point and the margins normal.

-At the top of the first page please put the title of your review and your name.

**Supplementary Figure 6: Rubric for the brief literature review assignment.**

<b>Score</b>	<b>50</b>	<b>45</b>	<b>40</b>	<b>35</b>	<b>30</b>
<b>Overall writing style, grammar, and ability to follow directions regarding the paper (laid out in the description)</b>	Student's writing style is clear and understandable. Proper grammar and punctuation has been used. All directions laid out in the assignment description have been followed.	Student's writing style is slightly unclear. A few grammatical errors and punctuation errors. All directions laid out in the assignment description have been followed.	Student's writing style is slightly unclear. Many grammar and punctuation errors. All directions laid out in the assignment description have been followed.	Student's writing style is very unclear. Many grammar and punctuation errors. Some directions laid out in the assignment description have not been followed.	Student's writing style is unclear and difficult to understand. Many grammar and punctuation errors. Most of the directions laid out in the assignment description have not been followed.
<b>Topic Description</b>	The topic is described completely and uses the literature to back up claims.	The topic is described but could be more complete. The literature is used to back up claims.	The topic is described but needs much more detail. The literature is used to back up claims.	The topic is described but needs much more detail. The literature is not used to back up claims.	The topic description is significantly lacking detail. The literature is not used to back up claims.
<b>Outline of what is known about the topic</b>	What is known about the topic is described completely and uses the literature to back up claims. The student does not simply summarize each paper.	What is known about the topic is described but could be more complete. The literature is used to back up claims.	What is known about the topic is described but needs much more detail. The literature is used to back up claims.	What is known about the topic is described but needs much more detail. The literature is not used to back up claims.	What is known about the topic is significantly lacking detail. The literature is not used to back up claims.
<b>Identify what still needs to be done or questions regarding the topic that are still unanswered</b>	What still needs to be done is identified and is described completely, using the literature to back up claims.	What still needs to be done is identified but could be described more completely. The literature is used to back up claims.	What still needs to be done is identified but needs much more detail. The literature is used to back up claims.	What still needs to be done is identified but needs much more detail. The literature is not used to back up claims.	What still needs to be done is significantly lacking detail. The literature is not used to back up claims.
<b>References</b>	There are 4 references properly cited in the text and in the reference section at the end of the document. The paper has not been plagiarized.	There are 4 references cited in the text and in the reference section at the end of the document. There are a few errors in the citation style and a few direct quotes. The paper has not been plagiarized.	There are 4 references cited in the text and in the reference section at the end of the document. There are many errors in the citation style and many direct quotes. The paper has not been plagiarized.	There are less than 4 references cited in the text and in the reference section at the end of the document. The paper has not been plagiarized.	There are less than 2 references cited in the text and in the reference section at the end of the document. The paper has not been plagiarized.